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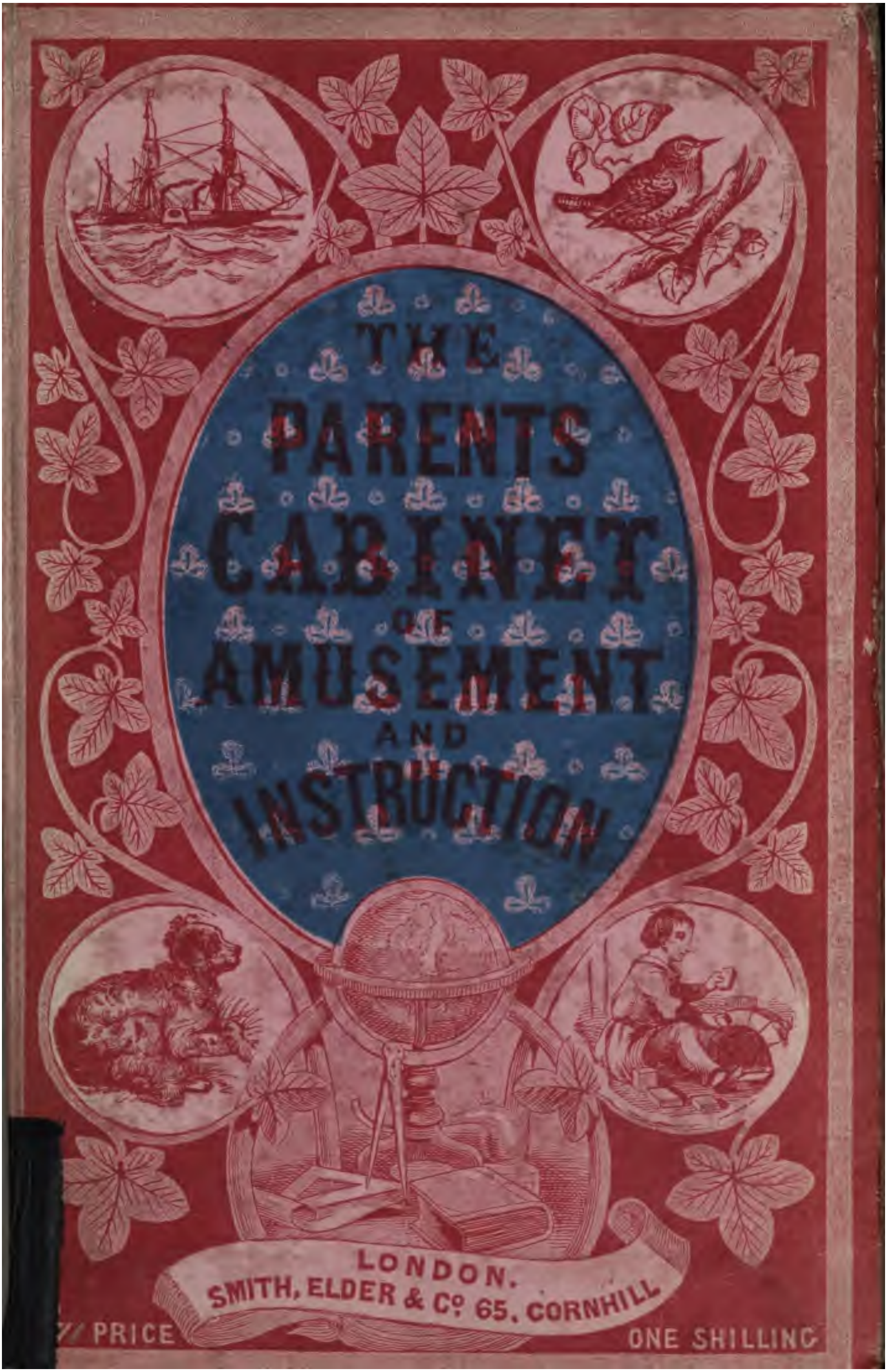

THE PARENTS CABINET OF AMUSEMENT AND INSTRUCTION

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THE PARENTS' CABINET

OF

AMUSEMENT AND INSTRUCTION.

TRUTH AND FALSEHOOD.

"DEAR FANNY, stay one minute! What shall I do? Don't tell papa, pray don't!" cried James;—"he told me never to take the ink-bottle out of the stand; and I have upset it all over this book of prints!"

What James said was too true. He had taken, without leave, a valuable book of prints to look at, and his elbow had unluckily overturned the ink-bottle. He had been using this ink-bottle, and had neglected to replace it in the stand. His sister Fanny, who was going out to spend the day, looked frightened when she saw the mischief that had been done.

James began to cry; and Fanny ran to fetch a basin of clean water and a sponge.

When she returned—"Pray, pray, Fanny, do not tell papa," said James.

"I don't want to tell him," said Fanny; "you had better tell him yourself."

"Oh, no, no! I cannot! He will be so angry with me; and he will not let me have the treat of seeing the horses at Astley's."

"Nonsense!" said Fanny; "if you tell him how it happened—that it was quite an accident, and show him at once the mischief you have done—I am sure he will not be so angry as you think."

James had not courage to follow his sister's advice. He knew that he had disobeyed his father's orders in taking the ink-bottle out of the stand, and he also knew that he had been strictly forbidden to touch the book which he had spoiled, except when his father was at home in the evening.

He watched his sister while she kindly tried to sponge the ink out; but the soft paper of the print had soaked it up so quickly, that all her endeavours were of no use. The print was quite spoiled. "It is of no use," said Fanny, "we shall only injure the other prints, James. You must let this leaf dry, and tell papa what has happened when he comes home. I cannot wait any longer—good-bye. Be wise, and tell the truth."

Fanny went, and James looked at the spoiled print till his eyes ached. He wavered; he grew more and more afraid every minute; and, at last, seeing that the print had dried, he shut up the book, and replaced it carefully on the shelf. He resolved to tell the truth if he was asked, but to say nothing about the accident till he was asked; and thus prepared himself to tell a lie.

James's father returned at his usual hour. The evening appeared to pass pleasantly. Fanny, seeing her brother so cheerful, supposed he had told his father of the accident, and therefore said nothing about it herself. James, before he went to bed, asked his father's permission for them to go and see the feats of horsemanship at Astley's theatre. "Edmund and John Selwyn are going, and I dare say that Mrs. Selwyn will take us too, if we ask her," said he.

"You must inquire, first, whether Mrs. Selwyn will take charge of you," replied his father—"business will prevent my going."

"Oh, I know she will," said James, "for Edmund told me so."

"Very well," said his father, "let me know on what night Mrs. Selwyn intends to go; and then, if you have deserved it, you shall have the treat."

Pleased as James felt when his father said this, he had also a feeling of shame that he did not boldly tell what had happened. But the fear of losing the promised treat, and of suffering the punishment which his disobedience might be considered to deserve, made him silent. The safe, straightforward, and manly course was open to him, but he did not pursue it. Instead of at once acknowledging his fault, and so getting it off his mind, he resolved to strive to the utmost to prevent his bad conduct from being discovered till he had enjoyed the much longed-for treat. Foolish boy! how much unhappiness was he preparing for himself!

"Have you told papa?" was the first question that Fanny asked her brother, when she saw him next morning.

"Yes, yes," said James, hastily, and colouring with the shame he felt at the lie which he uttered.

"And papa has forgiven you? I told you so—how kind he is. I must thank him too," said Fanny, "for now I feel quite comfortable!"

"No, no," said James, "you need not do that, because—because—I—I—have not quite told him all."

"Then let me go and tell him, and let us take the book and show what has been done," said Fanny.

"No, no—not now, dear Fanny: if you do such an unkind thing I shall lose the sight of the wonderful horses," and James held her fast.

Fanny hesitated. "Will you promise me if I do not go that you will? for I cannot bear that papa should be cheated: and it is cheating him to let him think that we have deserved a treat when we have not."

"I shall not promise you," said James; "you have no business to interfere. If you are afraid for yourself, go and tell, selfish telltale as you are."

"Oh, fie—fie!" said Fanny, "I am no telltale, and I am not selfish. I do not wish to have any pleasure if you do not share it also. But why will you not be honest, so that we may enjoy ourselves together?"

James was stubborn in his folly. "Go and tell," he repeated, "and so hinder me from having a treat that I wish for more than anything else in the whole world—unkind Fanny!"

Fanny was vexed to hear James say this, and with sorrow she consented to be silent until she was asked. Thus far she yielded; but, if asked, she was resolved to tell the truth. But she felt unhappy, and, when her father praised her and called her his trustworthy daughter, and spoke of the good example she gave to her younger brothers and sisters, and signified his intention of giving, on her account, the desired treat to them all, she could not thank him, for it appeared to her as if she had agreed to be a party to a deceit. She went out of the room as quickly as possible, and cried very much. James was obstinate; and her reluctance to expose him prevented her telling her father that they did not deserve the treat.

After lamenting for some time, she resolved that she would not, at all events, herself partake of the intended pleasure. She returned to the room in which her father was sitting, where she found James full of spirits, laughing and joking, and talking of the fun that he was to have on the approaching Wednesday. Fanny, with as much courage as she could muster, and with a firm voice, asked her father whether he should be displeased with her if she did not join the party.

"Certainly not, my dear," said her father. "I wish you to please yourself. But why should you not go? Hey, Fanny my dear, in tears!" continued he in surprise. "I expected to have had smiles, and not tears, when I proposed a party of pleasure to you."

"I am not ungrateful, dear father," said Fanny, "but—but I should not enjoy your intended kindness, and what is worse, I cannot tell you the reason."

When Fanny began to speak, James, quite frightened, ran out of the room. He stood trembling at the outside of the door, biting his nails, and annoyed at what he called his sister's folly, because she was too honest to allow herself the enjoyment of a pleasure which she thought she did not deserve.

The selfish coward was quite safe. Fanny kept his secret, although she denied herself, because of it, the pleasure of going with Mrs. Selwyn to the theatre.

Her father was much surprised, but his confidence in his daughter was so great that he forbore to question her, and assured her she was quite at liberty to go or not, as she pleased.

Fanny felt herself happier for the decision to which she had come; and once more she sought James, and endeavoured to induce him to own the mischief he had done. But James was as obstinate as ever, and refused. He thought he might escape altogether; for his father was so occupied that he had very little time to spend with his family, and very seldom looked into the injured book.

Fanny assisted to dress her younger brother and sister. "Why will you not come with us?" asked little Emma, over and over again. But Fanny said she could not tell her. She saw them all depart, glad that she had had courage to do what she thought right. James had once or twice felt sorry that his bad conduct should have deprived his sister of a pleasure so much wished for. But the love of his own gratification conquered every better feeling, and he departed, telling Fanny that she was very silly for not joining the party.

Fanny passed the evening alone, and had been asleep some time before the happy little party returned home.

The next morning she was quite astonished at the wonderful things that were related to her, and when her brother Robert asked her if she should not like to have seen all these beautiful things too, Fanny said, "Yes, indeed, I should."

Her father overheard this conversation, but he did not interfere. He was pleased with the self-command which could make a little girl of twelve years of age deny herself a pleasure because she thought she did not deserve it, although he was ignorant what the fault was.

The children were so delighted with what they had seen, that when they were all assembled around their father on the following evening, they began to describe to him how wonderfully the horses obeyed the orders of their riders; and after talking about them for some time, Emma said, "One part of the scene, papa, was just like that picture you showed us of the knight forcing his horse to plunge through a torrent of rushing water."

"I never saw that picture," said Robert and George. "Do let us see the picture, papa."

"The picture, or rather the print, which your sister speaks of, is in my choice book, but I will show it you; remember only that you must keep your hands from touching the book."

The children promised to be careful, and James, among the others, drew near to see the print. When James saw his father bringing the very book which he had injured, he began to be afraid that his disobedience and deceit would be discovered. His sister Fanny had just left the room.

The book was placed on the table. His father took his seat to show the print, and opened the book at once at the blotted print. The surprise and vexation of his father were great. "Who has done this?" "Oh, what a pity!" "I did not do it!" "I never saw the book before!" were the exclamations from the different parties.

Their father looked attentively at the faces of all the children. James felt himself colour, but, as he met his father's inquiring eye, he said, "It was not I that did it;" and then, when he had told the lie, his heart began to beat so violently that he could hardly stand.

All the other children earnestly denied having meddled with the book.

"If neither you, James; nor you, Emma; nor you, Robert; nor you, George, have done this mischief, who has? Surely it cannot be Fanny?" And as their father said this, he remembered her distress about the party of the evening before.

"I remember," said Emma, "that my sponge had some ink in it a few days ago, and Fanny told me that she had been using it."

"Sorry as I am for the injury done to this valuable book," said her father, "I would rather have had every print in it spoiled, than that any one of my children should attempt to deceive me. Call Fanny; tell her I want to speak to her instantly."

At this moment Fanny came into the room. "Come here, my child," said her father; and she came up to the table. When she saw the book, she coloured, and first looked hastily at James, and afterwards at her father.

"I did not blot that print, father," said she: "I assure you I did not."

Fanny saw by the fixed look of her father's eye that he half suspected her. But although this distressed, it did not frighten her. She repeated, in a low tone, but firmly, what she had said.

"How came there to be ink in your sister's sponge a few days ago?" asked her father.

"I took the sponge to try to get the ink out of the print," replied Fanny; "but the ink was not spilled by me."

Their father then turned to the other children, and said, "Before I ask Fanny who spilled the ink, I will once more give the guilty one among you the opportunity of owning the truth. Who spilled the ink on this print?"

The younger children again exclaimed that they did not. But James, when his father looked at him, as if waiting for him to speak, could not answer. "James," said he at length, "why do you not answer?"

"Speak, James!" cried Fanny.

Ashamed and frightened, James stammered, "Dear father, forgive me this once, and I will never do so again."

"Go up to your bed-room," said his father, gravely; "I am too much grieved to speak to you to-night."

James went. Bitterly did he now regret that he had not followed his sister's good advice.

After he had gone, Fanny explained to her father how the accident had happened, excusing James as much as she could, and then entreated her father to forgive him.

"Fanny," said her father, "I should be glad to give you pleasure, but what you ask would be no real kindness to James, but the reverse. For if he escaped the natural consequences of his falsehood, and was treated with as much confidence as before, there would be a danger of his bad habit being confirmed; and if he should become an habitual liar, he would be unhappy himself, and make us all unhappy. In the hope, however, that this may be sufficient, I shall only require that he shall confine himself to his room the whole of to-morrow. This confinement will give him time to reflect upon his past bad conduct, and to form good resolutions for the future."

Weeks passed on. The father of this happy family had the pleasure of believing that the younger children were growing up as truth-telling and trustworthy as their sister Fanny. The fault of James had been forgotten, and he had been in part restored to his father's confidence.

One evening the whole party were sitting together. They were reading, by turns, "Robinson Crusoe's Adventures," and had just come to that part where Robinson was startled at hearing his name called, when a letter was brought in.

Fanny took the letter from the servant's hand, and gave it to her father, who, after reading it, shut "Robinson Crusoe," and handed the letter across the table to James. "Read that letter, James," said he, "and tell me whether I shall be harsh if I henceforward refuse my confidence to you."

James turned pale, and then became red as soon as he saw by the handwriting that the letter was from his schoolmaster. Trembling, he read it, and hung down his head with shame.

The letter complained that James, during the last week, had not reached school until ten o'clock, and sometimes not till half-past ten; whereas formerly he had always been punctual to nine o'clock, the hour at which the school began. The excuse which James had given, that he had been kept at home to assist in dusting the books, placing them regularly on the shelves, and writing a catalogue of them, was not considered satisfactory; and the schoolmaster begged, as a favour, that James might in future resume his former regularity.

The reason why James had not been at school in proper time was not, as stated by himself, that his father had detained him at home, but that he had loitered away an hour, unknown to his father, with John Selwyn.

Severely did he feel the disgrace of having lost his father's confidence. He was no longer trusted in anything. Every day somebody went with him to school, and was sent to bring him home, to the great inconvenience of the remainder of the family. If he spoke he was not believed; and he often had to feel that he was suspected, even when he told the truth. Whenever he was ordered to do anything, he had the mortification of seeing that somebody followed him to ascertain whether he had really done what was ordered; and, besides, whatever went wrong in the house, he seldom escaped suspicion.

After some months, James became accustomed to the sight of somebody walking by his side to and from school, and almost ceased to think of the cause. But every now and then something else happened to remind him that the loss of his character deprived him of many enjoyments. It is impossible to give an account of all that he suffered. Faults which he had not committed were often laid to his charge, and on many occasions his good conduct did not obtain for him the praise and credit which it deserved.

One day he returned home from school with more joy than he had shown since the discovery of his falsehood. He said that he had an invitation to spend the next day at the house of one of his schoolfellows, named Selby, and that there was to be some fine fun.

"We are to have a game at cricket, and we are to have two tents with flags, and plenty of fruit and cake. In the evening we are to let off sky-rockets and catherine-wheels, and all sorts of fireworks. Dear Fanny, do ask papa to let me go."

"Yes," replied his good-natured sister, "I will ask papa; but I am afraid he will say 'No.'"

"Why?" asked James.

"Because you know he does not believe what you say," answered Fanny.

"That is very hard," said James, "for I am sure, Fanny, I have not told an untruth a long, long time."

"I am very sorry that you should have told one at all," said Fanny; "but papa says that when a person unfortunately gets a character for telling lies, he will not be believed even when he tells the truth."

"Do you think, Fanny, he will not believe that I am invited? Oh, dear! oh, dear! what shall I do? I am invited, indeed, for I am Tom Selby's greatest friend. Oh!"—and he began to cry at the thought,—"if papa should disappoint me, I shall break my heart."

"Poor James!" said little Emma; "what a pity that you should have told a lie! Papa always believes me."

"Don't fret beforehand, James," said Fanny. "Be patient, and if papa will not trust you, and let you go, bear the disappointment as well as you can."

"But when will papa believe me again?" said James, whose tears were running plentifully down his cheeks.

"When you have earned a character for truth-telling, and, therefore, deserve to be trusted," said Fanny.

"To lose such a pleasure!"—and James, in spite of the kind entreaties of his sisters, who were truly sorry to see him so unhappy, and who pitied him in his present suffering for his former folly, sat down in a corner of the room, and cried bitterly.

His father was detained by business this evening, until nearly nine o'clock; and he came home much fatigued. James had been watching for his return with a heavy heart; and as soon as his father had finished taking his tea, he mustered up courage, and went to him.

"Papa," he began, "to-morrow is Tom Selby's birth-day, and his father and mother have given him leave to invite as many of his school-fellows as he pleases. He has asked me. May I go?"

"Where is the letter that invites you?" asked his father.

"I have none. Tom asked me at school without a letter," said James.

"I am sorry for that," said his father, "as I cannot take your word that you are invited, and it is too late, and I am too much tired to go and learn if you really have been asked. You cannot, therefore, join the party."

"Dear father," said Fanny, "I do not think that James has told an untruth about anything for a long time. When he broke the window, he came and told me directly, although nobody could have found out that he had done it, and ——"

"Fanny, I am happy to hear what you say; but it will not do for me, by an ill-judged kindness, to hinder his learning, while he is young, how necessary it is for his happiness that his word should be believed. Although he must lose the pleasure which he wishes to enjoy, I still hope that he is now telling me the truth. It will be some consolation to him in his present affliction, that if he has not regained, he is at all events regaining the confidence which he lost by his own misconduct."

"Father," said James, "I am indeed telling you the truth."

"But I am not yet prepared to rely on your word, although I hope shortly to be able to do so again," said his father. "I am sorry for you, James, very sorry, and sincerely do I hope that you will profit by this painful lesson."

James once more cried bitterly. He felt that his father was justified in not trusting him, and he felt the severe consequences of being without a good character. His tears fell now more for being suspected to be a person who would cheat another if he could, than for losing the pleasure of the next day.

"What can I do to get my father to trust me again?" said he to his sister Fanny, as he went to his room. "I cannot bear to be thought a liar and a cheat. Dear Fanny, will you keep an account of all I do in writing, and give it to papa every night, that he may see I am trying to deserve his confidence?"

Fanny willingly agreed to do so. She assisted her brother in all his plans to endeavour to prove to her father that he really deserved to be trusted again.

One morning James had the delight to hear his father say, "Fanny, you may let James go to school by himself to-day. Your daily account has done him so much credit, that I will try to restore to him my confidence; and I hope, on his side, he will show himself worthy of it."

Proud of this favour, James did not fail of being in good time for school. No idle friend could tempt him to spend a few minutes on the way. He steadily resisted every attempt of the kind, and daily went straight from his father's house to the school, without stopping for anything.

His father, when he saw that James was thus careful to deserve his confidence, trusted him, little by little, in other things. James knew that all his actions were strictly watched, and he felt, therefore, that the confidence placed in him was what he really earned by his good conduct.

Among other things, James was trusted with letters to put into the post; the post-office being at a short distance from his school. One morning when James arrived at the post-office and put his hand into his pocket for the letter with which he had been charged, to his great dismay he could not find it. He feared he must either have left it at home or dropped it on the road. So he ran back as fast as he could to his father's house; but neither on the road nor at the house could he find the letter. He then thought it best to go, as usual, to school. He arrived there, it is true, rather too late; but so early had he latterly been, that the clock, even after this double walk, did not show more than five minutes past nine.

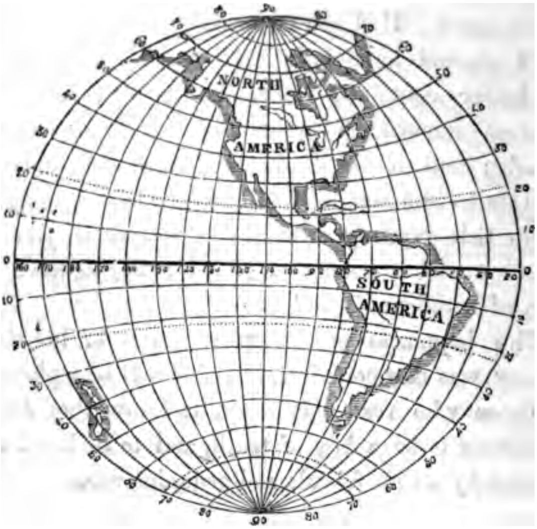
In the afternoon, when his father returned, James, although very uncomfortable at his own carelessness, went at once to him and told him of the loss of the letter.

"Shake hands with me, my brave boy," said his father, "for now I feel that I need not fear to trust you. I am vexed at the loss of the letter, but I have still time to write another and send it by to-night's post. Had you concealed your accident from me, I should have been very much distressed, for the letter contained information which is of the greatest importance to one of my most valuable friends; and, if the intelligence were long delayed, the loss to him and his family might be very serious. From this day, my dear boy, I restore to you my fullest confidence, never again, I trust, to have the pain of withdrawing it."

The happiness of James, and also of his sister Fanny, was now complete. And it will be a pleasure to those who read this story, to know that James continued to be a boy of truth, and to be loved and trusted by all his friends and acquaintance.

GEOGRAPHY.

LATITUDE AND LONGITUDE.



We have observed how useful it is to know the direction in which different places on the earth are situated. Having learned the direction which one place bears to another, it is no less useful to ascertain the distance also. Suppose, for example, we wished to sail from London to Quebec. Having learned that Quebec is west of London, we should be anxious to know in addition whether it is 10, or 100, or 1,000 or 10,000 miles distant.

In fixing upon measures with which to calculate distances, they should be contrived of such a length as not to bewilder those who use them with an unnecessary number of figures. They should at the same time be sufficiently short to give a clear notion of the distance measured. To accomplish these two objects on all occasions, a variety of mea-

sures of different lengths have been invented; such as inches, feet, yards, fathoms, rods, furlongs, and miles.

12 inches are the same as	1 foot.
3 feet	1 yard.
6 feet	1 fathom.
5½ yards	1 rod.
40 rods	1 furlong.
8 furlongs	1 mile.

Linen and woollen cloth, the length, breadth, and height of rooms, curtains, and other furniture, are generally measured in yards, feet, and inches. Small gardens, short streets, alleys, and pieces of road are measured in the same way. The cables of ships, and the depth of water in seas and rivers, are measured in fathoms. The length of roads from one place to another is divided into miles and furlongs.

The rule observed is,—the longer the distance to be measured, the longer should be the measure by which the distance is marked. Everybody can see how much simpler it is to say, "We came to anchor with 95 fathoms of cable," instead of saying "570 feet," or "6,840 inches;" although these three ways of measuring the same length are equally correct. From London to Dover, by the turnpike road, is 71 miles, or 124,960 yards, or 4,498,560 inches. Can any one doubt which of these is the more convenient measure?

The circumference of the earth being about 25,000 miles, if the distance between different countries were always expressed in miles, the use of large numbers, however inconvenient, would be unavoidable. To prevent this inconvenience, a larger and more convenient measure, called a degree, has been generally adopted.

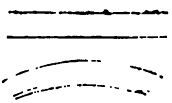
The circumference of a sphere is a line drawn round the sphere so as to divide it into two equal parts called hemispheres. A line may be drawn round a sphere which divides it into two unequal parts. Such a line is a circumference of a circle only, but not a circumference of a sphere. Any line drawn round the sphere which passes through both poles is a circumference of the sphere; and the equator, which is equally distant from both poles, is a circumference of the sphere.

The measure called "a degree" is contrived by dividing the circumference of a circle into 360 equal parts. Each of these parts or degrees is again divided into 60 minutes, and each of these minutes into 60 seconds. These measures of degrees, minutes, and seconds, combined with the directions of "north and south," and "east and west," enable us to point out with precision the different places on the earth.

To avoid the repetition of the words "degrees," "minutes," and "seconds," marks for those words have been invented; ° for degrees, ′ for minutes, ″ for seconds: thus, 40° 39′ 42″ means 45 degrees, 39 minutes, and 42 seconds.

The distance between the two poles, measured in degrees, is 180 degrees; 90 degrees of which are between the north pole and the equator, and 90 degrees between the south pole and the equator. All places situated between the equator and the north pole are said to be in north latitude; and all places between the equator and the south pole are said to be in south latitude; the word "latitude" meaning "distance in degrees from the equator."

Lines are usually drawn on the globes to mark every 10 degrees of latitude, thus making eight circles to the north of the equator and eight to the south. These lines are called parallels of latitude. Any number of these parallels might be drawn if the size of the globe would admit of them. They assist the eye in discovering what are the latitudes of different places.

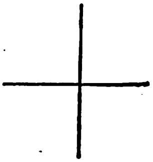


Parallel lines are lines which preserve the same distance from one another, to whatever length they may be extended.

It has already been observed that a perfectly correct representation of the surface of a globe cannot be given in the shape of a map. The parallels of latitude, therefore, which are truly parallels on the globe itself, cannot be made so in a map. They are drawn as nearly so as possible.

While the distances north and south are measured in degrees, and marked by circumferences of circles parallel to the equator, called parallels of latitude, the distances east and west are measured also in degrees, and marked by circumferences of circles perpendicular to the equator, called lines of longitude. The equator is a fixed line from which all nations have agreed to measure latitude north and south. But there is no fixed line from which all have agreed to measure longitude, east and west. Many nations are in the habit of measuring from the principal town in their own country. The English measure east and west from London, or rather Greenwich, a little to the east of London; and as more maps and charts are printed in England than in any other country, and as the ships of England are more numerous than those of any other country, the English method of reckoning is beginning to be very generally adopted.

A line of longitude is a line drawn from pole to pole. It is half the circumference of the sphere, and cuts the equator at right angles. To cut the equator at right angles is to be perpendicular to the equator, for when two lines cross so as to be perpendicular to one another, they are also said to cut one another at right angles. Any number of these lines of longitude may be drawn, as may be found convenient, accord-



ing to the size of the map or chart. On the globes, as usually made, thirty-six of these lines are drawn; so that there is a distance of ten degrees between every two adjoining lines. But sometimes no more than twenty-four are drawn, and then there is a distance of fifteen degrees between every two adjoining lines. The first line of longitude is drawn through the place from which it is intended to measure the longitude of all others.

The distance between each pole and the equator being 90 degrees, the latitude of any place can never exceed 90 degrees; but its longitude may be as much as 180 degrees, or half round the globe. On some maps the longitude, instead of being reckoned "east" and "west," is reckoned "east" only, all round the globe. In this way of reckoning, the longitude of some places is nearly 360 degrees. The lines of latitude and longitude, crossing or cutting one another, enable everybody to discover with ease and certainty on the globe or map the situation of any place of which he knows the latitude and longitude.

A line of longitude is also called a meridian line. While the earth spins round or revolves from west to east, the sun appears to us to move from east to west. As each place in its turn comes directly opposite to the sun, it is noon at that place. Now every other place that is situated on the line of longitude which extends from pole to pole, and passes through that place, has noon at the same time. The earth makes a complete spin or revolution every twenty-four hours. At the end of each hour, therefore, it is noon to places exactly fifteen degrees more to the westward: and when the meridian lines marked upon the globe are fifteen degrees apart or twenty-four in number, they are equal in number with the hours of the day.

The lines of longitude are not, like the lines of latitude, parallel to one another. They all meet in two points; and those points are the two poles. The poles have no longitude, and the degrees of longitude measure less and less as you get nearer and nearer to the poles, or farther and farther from the equator. But as the earth spins round, each place on its surface moves the same number of degrees in the same space of time. The degrees of latitude all measure the same; and a degree of longitude on the equator measures the same as a degree of latitude: that is, in each case the circumference of the sphere is divided into 360 parts, and one of those parts is the measure of the degree.

The number of miles in a degree of longitude on the equator and in a degree of latitude is easily found, for we know that the circumference of the earth is about 25,000 miles: and if we divide that number by 360, we shall get 69½ miles for the measure of a degree of longitude on the equator, or of a degree of latitude.

As you go farther and farther from the equator, or nearer and nearer to the pole, the degree of longitude measures a less and less number of miles, till at the poles themselves longitude disappears altogether. At Petersburgh, the principal town of Russia, situated in 60 degrees north latitude, the degree of longitude measures 34¾ miles, or exactly one-half of 69½ miles, the measure of a degree of longitude on the equator. During each complete revolution of the earth, therefore, Petersburgh, although it is carried round the same number of degrees as any place situated on the equator, is only carried round half the number of miles.

When you know the latitude and longitude of a place, and wish to find its situation on the map, you must look at the top or the bottom of the map where the degrees of longitude are marked, and at one of the sides of the map where the degrees of latitude are marked. Put your finger on the spot where the longitude of the place which you are desirous of finding is marked at the top or bottom of the map, and carry your finger from that spot *perpendicularly* across the map. Find the spot at one of the sides where the latitude is marked, in the same way, and carry a finger of your other hand *horizontally* across the map. The place which you wish to find will be exactly where your two fingers meet on the map.

Knowing that a degree of longitude on the equator and a degree of latitude measure 69½ miles, the method of finding the distance in miles between any two places is simple. Stretch a piece of thread across the globe or map, from one place to the other, and mark the distance of the two places on the thread. Apply this thread to the equator or the line on which the degrees of latitude are marked. You will then know the distance between the two places in degrees of latitude, and these degrees of latitude multiplied by 69½ will give the distance in miles. The distance from London to Petersburgh, measured in this way, is equal to about 17 degrees of latitude, which, multiplied by 69½, gives about 1,200 for the distance in miles.

There are other reasons for making use of "degrees" as measures of distance, but these cannot be explained at present.

LIFE AT A FARM-HOUSE,

OR

LETTERS FROM CHARLES LONG TO HIS BROTHER.

DEAR ALFRED, *Ashburn Farm, August* 15, 1858.

I DARE say you are wondering where Ashburn Farm is, and how we happened to be here. Well, as you cannot guess, I shall tell you. A week after you returned to school, papa was travelling near Leith Hill, when he saw written up at a very pretty farm-house, "Lodgings to Let;" and, as he thought mamma would like to stay there for a short time, he took the lodgings for a month, and wrote to tell her what he had done. So now you know how it is we are all here. I wish you were with us, for I am sure you would enjoy the place as much as we do. I have so many things to tell you that I hardly know which to begin first. I must not try to write of everything at once, or I know I shall be tired long before I have done; so I shall begin this great sheet, and write a bit every day, and then mamma says it will be a kind of journal.

Do not you remember the "Farm-yard Journal," in "Evenings at Home," and how you and I have wished to stay at a farm-house? I have not seen everything that is described in that journal yet, but I have seen a great many entertaining things.

Directly we arrived I went with papa and Mr. Benson into the farm-yard, which is very large and surrounded by barns. One man was busy thatching a haystack, another was milking the cows, and a boy was feeding the pigs with hogs' wash. One old sow had a litter of seven little pigs: they were much prettier than their dirty mother. Would you believe it? the stupid creature has killed three of them by laying herself right over them! She never moved her fat sides, though the poor little creatures squeaked loudly. Mr. Benson says that sows are very careless of their young ones.

On one of the barns there are nailed more than fifty dead moles, besides hawks, kites, owls, and weasels. Have you ever seen a mole? I never had until I came here. It is a very pretty little animal, and very curious. The skin is of a slatish-coloured brown, and is as soft as mamma's velvet bag. I asked Mr. Benson why he killed them, and he told me that they injured the land by throwing up mole-hills and by destroying the roots of the grass: but mamma says that many people think they do good to the farmer instead of harm, particularly if the land is wet. As they live principally under ground, and make a great many little passages or burrows, these persons think that they help to drain the land. It seems a great pity to kill them, if they do not injure us. However, as Mr. Benson thinks they hurt the land, it is not cruel of him to destroy them. He sends his dog Bob after them, who snaps at them so quickly that they are dead in a moment.

Mr. Benson gave me a live mole the other day, which I kept in a tub of earth for several days, and then somehow he got away. Mamma made a drawing of it, which I send you, but you must take care not to lose it.

I wish you could have seen how quickly my mole buried himself in the earth, turning up the earth with his long moveable snout, and scratching the earth with his broad front paws. Those paws are not placed in the same manner as the front feet of other animals; they stand outwards, and are like hands. The nails are so sharp and strong that the earth must be very hard which the mole cannot clear away. I have something that will show you the shape of their paws better than the drawing, Alfred. A man lives near the farm, who stuffs birds and animals, and he has stuffed for me a mole which Bob killed; and when you come home you shall see it. People once believed that moles had no eyes, but that is a mistake; for, though their eyes are generally covered with fur, so that they cannot be easily seen, yet they are like little black beads, and quite bright. Papa showed them to me, and I saw them quite plainly. There is no outside ear, but, for all that, the mole can hear well enough. The real ear, which is nothing but a little hole, has a small flap of skin over it, which the mole can open and shut as he likes. As he lives under ground so much, I think that little flap must be very useful to him, do not you? Mr. Benson says that they live on insects, roots of plants, worms, and larvæ; and so they may in the fields; but my mole fed on bread, little pieces of roast meat, pieces of fruit, and several other things. One day I gave him some dead minnows, and he licked them all over with his tongue, and

then ate them. Mamma thought, by his licking the wet fish, that he might be thirsty; so I made a little hole in the earth in his tub, and sunk a cup of water in it in such a way that the top of the cup was level with the earth. Mamma and I stepped back a little distance to watch him. He soon came up, looked all round timidly, and then, seeing no one, began to drink very eagerly. The moment he caught sight of me he buried himself, but he quickly returned to the water. I cannot tell you how much he enjoyed it. I do not know whether a mole has ever been tamed, but mine was a fierce little fellow. If I touched him he squeaked like a rat, and tried to bite me with his sharp teeth. Moles have scarcely any neck, and their broad flat heads are all the stronger for digging. I do not think that moles are fond of being much in the open air, for mine never came up to the top of the earth but for food. Mr. Benson says they frequently change their burrows, for they do not like either dry hard ground or marshy places. He says that during winter they choose the hilly parts of the farm; that in summer he finds them in the valleys; and that, if the weather is very hot and dry, he observes their hillocks along the bank of the stream. I wish I could see one of their nests, for Mr. Benson says they are built very carefully. They resemble little rooms with arched ceilings, the walls of which are made quite firm with mud and roots mixed together. When they are completed they are well lined with grass and leaves, and a store of provisions is laid up in them. The moles do not forget to build several little passages that lead from the nest to the openings at the top of the earth at some distance from one another. The moles can either escape by these, if pursued by any animal, or they can use them when they creep out cautiously to procure food.

I cannot write any more to-day. I wish people would invent some short way of writing, for my hand quite aches.—Your affectionate brother,

CHARLES.

DEAR ALFRED, *August* 18*th*.

I HAVE a sad disaster to tell you of to-day. Mr. Benson has had six of his best geese stolen off the common. The boy who feeds the pigs and the poultry had driven them to the common between seven and eight o'clock yesterday morning, and about nine the old gander came screaming and flying into the farm-yard as if he would tell everybody that something strange had happened. He went straight to the sleeping places, and, not finding the geese there, he set up a most dismal cry. Then I saw him wandering round the haystacks and barns, searching in vain for his companions, and every now and then stopping to utter his sorrowful cry. Mr.

Benson and the farm servants at length observed him, and they suspected that the geese had been stolen. So away we all set off in different directions, to try to discover the truth. I followed Mr. Benson. First we went to the common; no geese were to be found there. But in a lane near we saw marks of feathers and blood. It was very clear that the geese had been killed there, and that the gander had escaped from the rest. We ran down the lane, for Mr. Benson thought the thieves must be near; but, just as we passed a dung-heap, he observed that some part of it looked as if it had been just turned over, so he examined it directly, and there he found three of his geese hidden under the rubbish. They had been hastily concealed there, I suppose, when the thieves heard the footsteps behind them. Mr. Benson found out the names of the persons who had been so dishonest, but the moment they heard that they were known, they left the place, and I think they will take pretty good care not to return here again. The poor old gander has gone on screaming every ten minutes all day yesterday and to-day, and the noise sounds quite sad. We are all very sorry for him.

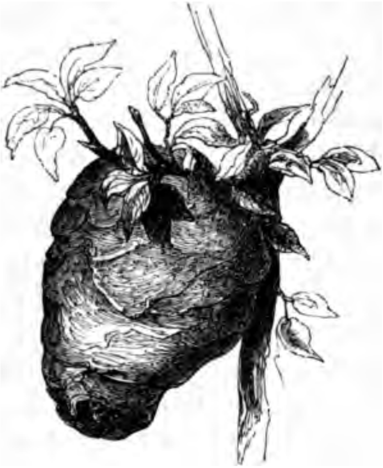
I have a ride on the pony every day; his name is Dumpling, and a nice fellow he is. Although he is so very frisky, he obeys any one who is kind to him. The boy who cleans him is so rough that Dumpling quite dislikes him. He will hardly ever let this boy catch him; while the moment he sees Mr. Benson he runs up to him and rubs his nose against him. He is beginning to know me now. How you would like to gallop over the turf! Dumpling tosses up his head and tail, and seems to enjoy it as much as I do. Sometimes I ride him without saddle or bridle; for when I am going round the farm with Mr. Benson, if the pony sees us he follows us, and then Mr. Benson lifts me up and throws his handkerchief round Dumpling's neck for a bridle, and we all go round the farm together.

My curiosity-box that you helped me to make a case for, Alfred, is half filled already, though we have only been here a fortnight. Before we go away from here I shall send you a list of all the things that are in it. I wish, next holidays, papa would give you and me a little room to ourselves. You could make some shelves, and I think we should soon fill them, and then we could keep the box for the delicate things. This is a famous place for insects, birds, and little animals. I hardly ever go out with Mr. Benson or Dutton, the carter, but I see something curious; a squirrel, a magpie, a kingfisher, a weasel, or something else.

Mr. Benson has been very busy to-day looking for wasps' nests. We have had so many wasps in the house, that it has been quite troublesome; and a great deal of the fruit in the garden and orchard has been spoiled by them. Scarcely anybody here has escaped being stung by them. I touched one the other morning, by accident, on the breakfast-table, as I was taking up the knife to cut myself some bread, and I got a sting on the finger. But mamma put a little sal-volatile upon the place at once, and the swelling soon went down. Mr. Benson was determined to blow up their nests with gunpowder. I am always glad to go wherever he goes; and he told me, if I did not care for a sting, I might help him to find the nests. We found twenty-three in different parts of the farm, most of them in dry, sunny banks, under the ground. One little hole was left in the mound for the wasps to creep in and out. Have you ever seen a common wasps' nest? It is very curious. On uncovering the earth, the nests look as if they were wrapped in coarse whitey-brown paper; and all the cells, instead of being made of wax, like the honeycomb, are made of the same papery stuff. Those cells that have the pupæ in them are covered with a little dome. I suppose when the wasp is ready to fly he is quite strong enough to gnaw through it. The larvæ, that must be frequently fed, have no little ceilings to their cells. Mamma says that the coverings of the nest and the cells are real paper, made by

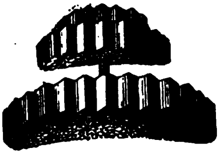
the wasps from the bark of trees, or from splinters from wooden posts or planks. The wasp bites very little pieces off, and mixes them with spittle, till they are made into a paste. When he has fixed one little piece, and it is well dried, he goes to work to make more. Mamma says that paper can be made from a great many different vegetable substances; and when we return home she is going to show me paper made from wood, and straw, and hemp, and the fibres of the cocoa-nut. Perhaps, if people had observed how the wasps made their nests, they might have found out sooner how to make paper. It must have been very inconvenient to write upon leaves or wax; and even when vellum or parchment was used, mamma says it was very dear. Indeed, I suppose they would not let boys scribble to one another then. There is a wasp in South America that builds a beautiful nest of thick white paper, as smooth and as white as the sheet of cardboard that you took back to school with you.

Now I must tell you of my grand curiosity. On coming home this morning, through the orchard, I saw something hanging to a pear-tree. On looking at it closely, it seemed just like a bundle of the same whitey-brown paper that the wasps' nest is made of. There seemed to be a great many folds of the paper; and on the lower part there was a hole. I watched for some time, for there was a good many wasps near; and presently I saw two settle at the edge of the folds, and another came out at the hole. I called Mr. Benson, who said it certainly was a wasps' nest, though not built by the common wasp. These wasps were much larger, and differently marked.



At first, Mr. Benson thought it was a horriet's nest; but the nest is much larger than a hornet's, and contains ten times the number of cells. I told Mr. Benson I should like the nest very much, if he could kill the wasps without spoiling it. This he did, after a great deal of trouble; and he then sawed through the branch of the pear-tree just above the nest; and now I have this curious nest to show you.

I begged mamma to draw the shape of it, that you might understand my letter. I am not sure I know how the combs are placed, because they fell out, and one part got trodden on, but I think this is the shape of them. The upper part was fastened to the top of the nest, and, what is very strange, all the openings to the cells seemed to be downwards. I wonder the larvæ do not fall out. Would not my wasps' nest, the mole, and your stuffed canary, look well in our museum? I do think papa will give us a room; and when we have a proper place for them, somebody might be so good-natured as to give us other curiosities to add to our collection. Good-bye. Dutton is going to yoke ten oxen to a waggon, and I must go and see them.—Yours, &c., Charles.



Dear Alfred, *August* 19.

I went in the waggon with Dutton right over Leith Hill to a wood, where the men have been cutting timber for some time past. The waggon went into such deep ruts that it was sometimes a hard job for the oxen to pull it out. What slow creatures they are! quite different to horses. But Dutton says they are very patient, and will work for a long time together. All the heath over the hill was in blossom, and it looked beautiful. A great many of the poor people thatch their houses with it; and they get plenty of good peat from the hill for firing. In the different farms people seemed very busy thatching their haystacks. Do you know Dutton says a common sized haystack is worth three hundred pounds; and that two of Mr. Benson's are worth nearly five hundred pounds? Only think how vexatious it must be when the hay is badly dried, and takes fire, as it does sometimes!

I saw plenty of squirrels in the wood. While Dutton and the men were loading the waggon, I amused myself with climbing the trees, and in trying to find some new wild-flowers for mamma; for I was tired of watching them so long.

What do you think I saw in one of the holes of the trees? Two beautiful little brown dormice in the middle of a nest of moss and leaves. One was asleep, and rolled up like a ball, and the other, with his bright twinkling black eye, would have run away if he could, but that was not so easy to do, for the nest was at the bottom of a deep hole, and as I looked down it the dormouse would have come nearer to me if he had tried to escape, so he buried himself in the leaves. I was quite surprised that its movement did not awake the other one; but dormice are drowsy little things, and sleep for a long time together. Do you recollect the verses on the dormouse in the

"Christmas Box?" I learned them once, but I shall like them better still, now that I have seen the little dormice in their nests. Mamma says they eat much the same kind of food as the squirrels,—nuts, and fruit, and chesnuts.

I must not write any longer, for papa says he has a parcel of books which he is just going to send to you, and that he will put my letters in it. I hope you will be amused with them, because if you are I will write again before we leave. It takes me a long time to write, but I wish that you should know what I am doing, and I have not told you half yet. Mamma and papa send their kind love to you.

Your affectionate brother,

CHARLES.

P.S.—I have put in a list of the things I have found since I have been here. I wrote it a day or two ago. I hope to find more:—

1. A mole.
2. A bat, which I found dead.
3. A stag beetle.
4. A piece of the comb and paper of a common wasps' nest.
5. The beautiful wasps' nest from the pear-tree.
6. Skin of a snake, quite perfect, and transparent, exactly as cast in the spring.
7. Oak galls, with the little maggots still in them.
8. Maiden-hair moss. The seeds are covered with little yellow silk caps. People in Lapland use this moss to stuff their pillows with.
9. A dead swallow. Picked up one day after a very high wind, when there were dozens of swallows killed by being dashed to the ground.
10. Two or three kinds of snail shells, which I found empty.
11. A bunch of jay's feathers.
12. A very large fir cone. Mamma says the flowers and seeds are at the bottom of each scale; and that if I place the cone in a tumbler with some water at the lower part, the moisture will make the seeds grow, and I shall see fine wiry leaves spring from every scale; even from that part of the cone which is not actually in the water.
13. Lichen. Plenty amongst the heath. Very much like the kind that the reindeer feed on.

PETER THE GREAT,

CZAR OF RUSSIA.

In all countries there is a chief ruler. In some he is called "King," in others, "Emperor," in others, "President." In Russia, the chief ruler is called "Czar." Peter the First, or Peter the Great, as he was afterwards called, was the first Czar of the name of Peter. He was born in the year 1672, and lost his father when only ten years old; and at the early age of seventeen he was acknowledged by the Russians as their chief ruler, or Czar.

The Russians were at that time a very ignorant and barbarous nation. It is true that all the other nations of Europe were also much more ignorant and barbarous than they now are; but the Russians were looked upon as barbarians even by them. Peter, although wanting instruction quite as much as the people of whom he was ruler, was fortunately aware of his ignorance. There are two kinds of ignorant people. One who, with their ignorance, are contented to remain ignorant all their lives. The other, who are sensible of their ignorance, but are, at the same time, sorry for it, and are resolved to spare no exertion to learn and improve. Peter was of the latter kind; and it has been often and justly observed that it is a great step towards knowledge to be sensible of one's own ignorance.

It was not Peter's fault that he had had no kind instructor to teach him in his childhood—it was his misfortune. Happily for him, while still a young man, he became acquainted with a foreigner of the name of Le Fort, who was an instructed man, and by whose advice and example he was urged to take those pains with himself which made him the useful man that he afterwards proved to be.

Peter was soon led to form many plans for improving the condition of the Russians, both by increasing their knowledge, and by introducing tools, articles of dress, and manufactures, which as yet were unknown in Russia. To assist himself in these plans, he applied industriously to the study of the German and Dutch languages, and as Le Fort was acquainted with these languages, he was able to help Peter in his laborious undertaking.

From Russians and from Russian writings he could not expect to learn anything. From Germans and Dutchmen, and from German and Dutch books, he knew that he might learn many things that would be useful to him. But as few foreigners could speak or write in Russian, it was necessary, if he wished to learn what foreigners alone could teach, that he should learn their languages. It was for this reason that he determined to make himself master of the Dutch and German languages.

Peter became warmly attached to Le Fort. He saw that he had met with a true friend; one willing to assist, advise, warn, and teach him—not a mere flatterer, ready to assent to whatever he might propose. Accordingly, he made him the confidant of all his future plans, many of which, in their execution, would be attended with difficulty and danger. In those days, and in that country, people thought very little of putting one another to death on any slight occasion of displeasure. And it is one misfortune attending ignorant people, as well among grown-up men as among children, that they will sometimes be displeased with those who kindly wish to instruct them and alter their bad habits. The sensible among the Russians were thankful to the Czar for his exertions for their good, but many attempts were made by the obstinate and brutal to destroy him, and thus put a stop to those improvements which they so foolishly disliked.

Among other things which the Russians were entirely without, but which were common in most other countries, were ships. This deficiency he determined to supply, because he wished the Russians to have the same means of communicating with other countries which were enjoyed elsewhere.

A story is told of an accidental discovery which, it is said, first awakened in him the desire of building and possessing ships in his own country. While looking one day,—and this was before he was Czar,—over some old stores, he chanced to cast his eye upon the hulk of a small English sloop, with its sailing tackle, lying among the rest of the lumber, and fast going to decay. This little vessel had been sent to Russia many years before for his father Alexis, but had long been forgotten by everybody. No sooner, however, was it observed by Peter than it fixed his attention. He made inquiries of some of the foreigners who happened to be at Moscow, as to the use of the mast and sails, for he was ignorant of things so well known among us as to be familiar even to children. The explanation which he received made him look upon the old hulk almost with affection. With some difficulty the Dutch shipwright, who had come to Russia with the vessel, was discovered, and by him it was soon re-fitted. The gratification of the young Peter was indeed great when he beheld the mast replaced, the sails in order, and the vessel moving upon the river that flowed by the town.

He afterwards, when Czar, employed this same shipwright to build larger ships; and, in the year 1694, he himself embarked in one at Archangel. He was the first Czar ever known to be on the White Sea.

But in all his early endeavours, he found himself constantly impeded by the ignorance and want of skill of those whom he was compelled to employ. To remedy this evil in some measure, in the month of March, 1697, he selected a hundred young Russians from among those who were anxious to learn, whom he sent to foreign countries; some to learn the management of ships, some ship-building, and some to learn a variety of other useful things.

More than this, he determined upon quitting his own country for some years, that he might improve himself by his own observations, and so learn how to improve others. He wished to instruct himself by his eyes and hands. He wished to see and judge and handle for himself; for he felt that there was no other way of learning equal to that.

Accordingly in the month of April of the same year, he set off from Moscow to visit the different countries of Europe. One of the persons who accompanied him on this occasion was his confidant and friend, Le Fort. He travelled as a private individual under a feigned name, in order that he might not be interrupted in his attempts to learn and improve. Such interruption he would certainly have met with, had he travelled in his public character of Czar; because rulers and chief men, when they travel in foreign countries, have so much attention paid to them, and are so much visited and feasted, that their time is completely taken up. Peter denied himself all this gratification, so highly esteemed by the thoughtless, for the sake of instruction; a gratification far greater in his eyes, as it is in the eyes of all wise men.

In spite of the good resolutions and praiseworthy intentions of the young Czar, a circumstance occurred before he had made much progress on his journey, which it is painful to be obliged to mention. At a dinner to which he was invited while in Prussia, he drank wine to excess, and became intoxicated.

Everybody who has had the misfortune to meet a drunken man has seen enough to know that such a man must be disliked and shunned by all good men. But there is something much worse in drunkenness than its appearance, filthy and hateful as it is. Who is there that has not at times been on the point of doing an unkind or a foolish action, or an action which would be attended with danger or injury to another, and has not checked himself in time? And what is it by which he has so checked himself? It is by reflection, by self-control, by reason, the exercise of which never can be looked back upon without the highest satisfaction and delight. Of this reflection, this self-control, this reason, drunkenness entirely deprives us.

The young Czar, while under the influence of the wine that he had taken to excess, in a moment of passion, over which he no longer had any control, drew his sword upon his friend Le Fort. Happily, Le Fort escaped without sustaining any severe injury. When the effect of the wine had passed away, and Peter became sensible of what he had done, he was horror-struck. He begged pardon of his friend, and bewailing his own want of self-control in having committed the excess that had well nigh led to so dreadful a result, he exclaimed, "Oh! I aspire to be the reformer of my countrymen, and have not yet been able to reform myself."

From Prussia he proceeded through Germany to Amsterdam, one of the places in which he particularly expected to gain useful information and instruction. Almost every thing that he saw on his arrival at that city was new to him. But what interested him more than anything else was the great East India dockyard at the village of Saardam, a few miles from Amsterdam.

To make himself perfect master of the art of ship-building, he engaged himself in this place as a working carpenter. He gave in his name to the superintendent of the dockyard, simply Peter Michaeloff (the Russian for grandson of Michael). He took his place among the other workmen, and became in all respects one of them; eating the same kind of food, wearing the same kind of dress, and living in equally small lodgings; working in the forges, the rope-yards, and in the mills which surround the village in such numbers. In these mills are sawed the fir and the oak, seed is pressed to extract the oil, paper is made, and metals of all kinds are wrought and moulded. With the method of all these trades and manufactures he made himself acquainted. The part of the village in which he lived is still shown at Saardam, but the hut itself has been long since pulled down, and a neat house built in its place.

In this way of life he spent many months, during which he took a considerable part in the building of a large ship. This ship, which his labour as a builder assisted in completing, was bought by him as Czar, and sent to Archangel, at that time the only Russian seaport, for the use of his countrymen. While thus employed, he did not neglect his other duties. Every evening, when the labour of the day was over, he attended consultations, gave directions, and wrote letters upon all subjects which required his attention in the government of Russia.

Among other studies to which he applied with much diligence was that of geography. It was with much delight that he both made new maps, and corrected those of others. He engaged many artizans, whom he induced to proceed to Moscow, not only to work themselves, but also to instruct the Russians how to work. It is curious, in following him in his minutest actions, to observe the vigilance and activity with which he endeavoured to make his plans succeed. He would not allow any workmen to proceed to Moscow at the expense of his country, of whose skill and industry he had not first satisfied himself by superintending them at their work.

In January, 1698, he crossed over to England, where he still insisted upon being treated as a private individual, and employed himself in inquiring into every thing that he thought might in any way be of advantage to his own country. For this purpose he worked, as before, at a great many manufactories. Among other things, he studied the art of watch and clock making with particular attention. He spent several weeks at the dockyard at Deptford, much in the same way that he had done at Saardam. He took, besides, lessons in mathematics, navigation, and anatomy. He laid out large sums of money in purchasing such curious productions of art as he thought most likely to interest his countrymen and stimulate them to industry and application. Both in England and

Holland, he never neglected an opportunity of becoming acquainted with clever and well-informed men, some of whom he persuaded to accompany him on his return to Russia.

At the end of May, 1698, he quitted England. He once more visited Amsterdam, and then, taking Vienna, the capital of Austria, in his way, he arrived back at Moscow in the autumn of the same year.

His exertions and his example were not lost upon his countrymen. He taught them how to build and to navigate ships. He even taught them improved methods of cultivating the land, and the management of flocks; having introduced from Saxony and Silesia both flocks of sheep and the shepherds to take care of them. He founded schools, likewise, and museums; and thus afforded to young and old the opportunity of learning everything that might add to their comfort and happiness.

The art of printing had, it is true, been introduced into Russia during the preceding century. The benefit derived from it, however, had been trifling. Peter found his country almost without books. To remove this great hindrance to instruction, he had many useful books translated into the Russian language, and while he was at Amsterdam, he employed a printer of that city to print them. He afterwards established several printing-houses in his own country, from which a number of books for the use of children, as well as of grown-up people, was supplied.

Among other of Czar Peter's works, which will be ever memorable in Russia, was the founding of Petersburg, now the capital city of that country. At the beginning of his reign, the Russians had only one seaport, Archangel. This town is situated very near the northern extremity of the country; and the approach to it for ships being round the north cape of Norway, is long and dangerous. The advantage which the Russians would derive from a more ready communication by sea with foreign nations had long been a subject of meditation with this wonderful man. He wished that his countrymen should be abundantly supplied with sugar, coffee, hardware, and other things which, however much they might be desired, never could be transported, in any quantities, so immense a distance over land.

At last, on the 27th May, 1703, he laid the foundation of Petersburg, at the top of the gulf of Finland, on the River Neva. At a little distance from Petersburg, in the gulf, is the island of Cronstadt, which forms the harbour. The depth of water between Cronstadt and Petersburg is not sufficiently great to admit very large ships. But ships of any size can come to Cronstadt, and lie there in perfect safety. The communication between Petersburg and the inland part of Russia is very extensive, by means of large rivers and lakes: so that the Russians are able to send to foreign countries, through Petersburg, large quantities of tallow, hemp, flax, corn, wood, copper, iron, bristles, and wax; in return for which, by the same boats and barges, they obtain sugar, coffee, tea, cotton and woollen goods, dyes, salt, coals, and every other description of useful things which they cannot produce at home.

Peter, therefore, as may be seen, not only laid the foundation of Petersburg, but also of an extensive foreign trade. In other words, he provided for his countrymen an outlet by which they might part with such things as they did not want, and which they could easily produce, in exchange for such things as they did want, and which they could not produce at all, or only with great difficulty.

Petersburg, which was a barren swamp in 1703, is now, after a lapse of 150 years, one of the largest and most flourishing cities of Europe. From May to November, every year, the harbour of Cronstadt is crowded with ships from almost every country in the world—all is activity and bustle; but from November to May, severe frost puts a stop to all water communication, and the cargoes of the last ships that arrive at Cronstadt every year are sent in sledges to Petersburg, over the ice, and so on to the surrounding districts.

When the ruling man of a country is said to have performed any great work, it is generally meant that the work was planned by him, and performed by his direction, or under his superintendence. And this is meant when it is said that Petersburg was founded by Peter. But Peter did more even than this. He not only planned and directed, but he executed, and thus encouraged by his example. He assisted, with his own hands, in building the first house that was erected. He had so ignorant and indolent a race of men to deal with, that it is probable he would never have got any of his great works accomplished, had he not, in addition to planning and superintending, engaged as a labourer in the midst of them. And for all this, he had qualified himself by his determined labour and application.

In the year 1717, the Czar made a second journey in Europe. He visited Copenhagen and Altona, and proceeding down the Elbe, to Stade, he continued his journey through Bremen to Amsterdam. His pleasure at once more beholding the scene of the exertions of his youth,—in reflecting upon the happiness which he had been the means of conferring upon his countrymen by the knowledge and skill that he had acquired, must indeed have been great! What gratification can be equal, in fact, to that of looking back upon years industriously and usefully spent?

He did not now work as a labourer. This would have been no longer of any use. His wish was now to observe what further inventions and improvements had been introduced since his first visit, that he might make them known also in Russia. After spending some time at Amsterdam, he visited Paris, the principal city of France, which his other occupations had not left him leisure to do on his former journey. In this celebrated city he met with many clever and learned men. Some of these, also, he persuaded to accompany him to Russia and assist, with the other clever men who had already settled there, in the great works of various kinds which were in progress.

In the midst of all his useful employments, the indefatigable Czar was continually engaged in war with neighbouring nations. Men, unfortunately, have not even yet become sufficiently wise to refrain from tearing one another to pieces, and from burning, destroying, and seizing one another's possessions; this is what is often called war, and boasted of as if it were a good action. But at the time in which Peter lived, and in his country, as well as neighbouring ones, people were still more barbarous than they are now, and were incessantly attacking one another. So far as Peter engaged in war, for the purpose of defending his own country from the attacks of others, he was deserving of praise; but it cannot be denied that he engaged in many wars for the sake of plundering, or, as it is called, conquering.

During the whole of his life, he was constantly employed in attempting something for the benefit of his country. If the object of his exertions was not always praiseworthy, it must be attributed to mistaken notions of what was good, rather than to the wilful performance of what was wrong. And at his death, which took place on the 21st of March, 1725, it might truly be said, that in spite of unnecessary wars, and of many ferocious actions, few men had done more during their lives for the benefit of others.

Never was a greater change produced in any country, in the course of one man's life. When he began his reign, he found Russia without trade, and without manufactures; without books, without schools, without knowledge. The few roads that there were, were almost impassable, and without inns; and the streets of the towns were without pavements. By his own surprising exertions he left his countrymen in the possession of an excellent harbour, numerous shipping, and an abundant supply of all kinds of foreign products; flourishing schools, printing-presses, and books. They were able to build ships, make clocks and watches, and manufacture a variety of other useful things. Canals, uniting rivers that flowed in different directions established communications from one end of the country to the other; and travelling was rendered comparatively easy and pleasant by means of the roads and inns that he had established. The art of medicine, also, by which disease is cured and prevented, and which had been introduced and encouraged by him, was generally and successfully practised.

We have only to reflect upon the energy and perseverance by which all this was accomplished, to admit at once that Peter was fully deserving of the title "Great," which was bestowed upon him by his admiring countrymen. He learned almost everything himself that he thought it would be good for the Russians to know. Kept in ignorance during his childhood, he nevertheless learnt, as he grew up, the art of ship-building and clock-making, canal-cutting and road-making; and he studied mathematics, navigation and geography, as well as foreign languages.

He had two great objects in improving himself; one was to be able to improve others, the other was to add to his own enjoyment. He appears to have been quite sensible that happiness is in no way to be more certainly obtained than by self-instruction.

One day, seeing two of his little girls reading a French book, he desired one of them to translate the passage before her into Russian. He was struck with the readiness and ease with which she complied with his request. "Ah, my children," said he, "how happy are you who are thus taught to read in your youth, and enjoy all the advantages of that instruction which I totally wanted." He was often heard to say that he would willingly have lost one of his fingers to have been well taught in his childhood.

MAKING TELEGRAPHS.

After James Robson had seen an electric telegraph work, he greatly desired to find out some easy substitute for this curious instrument; so that he might communicate with friends at a little distance without letters or messengers; and he thought of many plans to effect this. He knew that a bonfire was often used as a kind of telegraph, in times of war, rousing the whole country to defend themselves; and that rockets were also used to convey some kinds of intelligence. But he could not light a bonfire of sufficient size, to be seen a few miles off, half a dozen times a day, and the rockets were far too expensive; besides, but few meanings could be conveyed by either of these plans. In his perplexity he applied to his father, whom he found in his library, and, luckily for him, folding his papers and putting them away.

"Oh! I am glad, papa, you are not busy now," said James, "for I wish to ask you a great many questions. How did people contrive to convey news quickly from place to place without letters or messengers before the invention of the electric telegraph?

I suppose there was some way, though not half so good as the electric telegraph. I know about bonfires and rockets and ringing church bells to give alarm in time of war, or to shew that relief was near; and that the great coloured lights at the railway station are of use to the driver of the train, shewing when the way is all safe, and when it is dangerous: and that the small white flag which the railway officer holds gives information in the same way; but none of these could do for more than one meaning. I want you to tell me if there are any better plans than these; and if you think it is possible for me to contrive a kind of telegraph, so that when staying with William Hardy at Hampstead, I may send messages to my cousins at Highgate, and they to me. I can see their house quite plainly when I am at Hampstead, without a telescope, and with a telescope I can see the boys in the garden, and the cage with the thrush by the window."

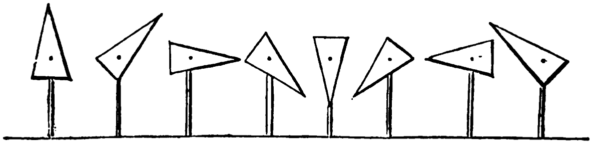
"You are not the first boy who has had a strong desire to accomplish this object," replied his father, "and I know of some boys who not only had the desire, but who thoroughly succeeded in attaining it, long before electric telegraphs were invented; but then their father was a very clever man, engaged at the time in important experiments on telegraphic communication."

"Oh, who were they?" inquired James, eagerly.

"They were brothers of Miss Edgeworth, the lady who wrote so many of the tales that have delighted you and thousands besides. Miss Edgeworth told me that during her father's experiments she had seen her younger brothers exceedingly happy, day after day and week after week, in making telegraphs and inventing the signs to be used, and then making use of their skill to convey various messages to a distance."

"Well," said James, "I should be as happy as they were, if I succeeded. Cannot you tell me some of Mr. Edgeworth's and the boys' experiments? I should like to hear about the boys' best."

"I wish I could do so," replied Mr. Robson, "but I only know of those Mr. Edgeworth made. In his first experiments in 1767, he conveyed intelligence by means of windmill sails. He afterwards employed four triangular pointers, moving on poles of wood; and each of these stood for a nought or for any numeral—up to 7, according to its position.



"When these four pointers were placed side by side they were intended to stand for units, tens, hundreds and thousands.

"Any number from 1 to 7,777, can thus be expressed, leaving out any number when 8 or 9 is wanted. These numbers referred to letters, words, or sentences in a dictionary made for the purpose.

"The *earliest* plan for telegraphic communication was invented by Dr. Hook, a learned English philosopher, in 1684; and from that time little or nothing was done until Mr. Edgeworth turned his attention to the subject. About fifteen or twenty years after Mr. Edgeworth began his experiments, the French took up the matter; and in 1793 or '94, they completed an instrument which became of great use to the French Government in time of war. No one, however, except Mr. Edgeworth, thought of making use of the telegraph for purposes of trade or domestic news; but he, encouraged by the attention that was now awakened to the subject, went on again with his experiments, and in 1794 succeeded in conveying, by telegraph, several messages from Ireland to England."

"Oh! papa, must not that have been thought wonderful, when there were no submarine electric telegraphs?" exclaimed James.

"Yes, indeed. Mr. Edgeworth employed two of his sons to try the experiment. He wrote some lines of poetry on the occasion, and some of these were spoken by the telegraph from shore to shore, by the young Edgeworths:—

"Hark! from basaltic rocks and giant walls,
To Britain's shore the glad Hibernia calls;
Her voice no longer waits retarding tides,
The meeting coasts no more the sea divides;
Quick at the voice of Fortune or of Fame,
Kindles from shore to shore the patriot flame;
Hovering in air each kindred genius smiles,
And binds with closer bands the sister isles."

"I like some of the lines very much," said James, "and I think I understand nearly every word of them."

"When Mr. Edgeworth," continued Mr. Robson, "had perfected a simple, useful telegraph, he wrote a work on the subject, called 'An Essay on the Art of Conveying Secret and Swift Intelligence,' urging his countrymen to adopt this new mode of transmitting thought, and prophesying that the telegraph would one day be employed in all the concerns of every-day life; and he even hinted at the possibility of a line of telegraph between Europe and India!"

"Just what they are trying to do now with the electric telegraph!" exclaimed James. "But, papa, was Mr. Edgeworth's telegraph or the French one used most in England, before the electric telegraph was invented?"

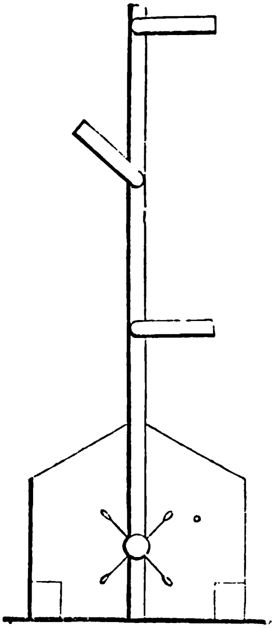
"Neither; but a telegraph, contrived by a Mr. Gamble, made something like a Venetian blind, with large moveable laths, each lath having holes which could be covered or uncovered at pleasure. This instrument was used for above twenty years. In 1816, the Admiralty determined to try the French method, greatly improved by Sir Home Popham; and this kind of telegraph or semaphore I have often seen working. There was one at the Admiralty which regularly communicated with the coast, and with Portsmouth and the Downs receiving, in return, accounts of the ships that were coming into port or leaving the shores. Indeed, *you* have seen something of the kind in the upright post with moveable arms at the railway stations."

"Oh, I have seen that; but I did not know its use, for I have never seen the arms move. Do tell me all about the one at the Admiralty. How quickly could it convey intelligence?"

"A message sent to Portsmouth, seventy-two miles distant, and an answer back again, usually took fifteen minutes; but the speed was much greater when the men were all ready at their stations on the look-out, and the air was very clear."

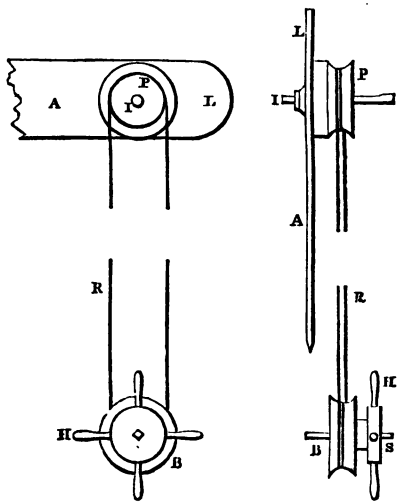
"But if this plan was so good," exclaimed James, with much surprise, "why did anybody need the electric telegraph? I did not know there were half such clever contrivances before the electric telegraph."

"One very good reason for the change was that in our climate there are a hundred days in the year in which, from the state of the weather, the signals of the old telegraphs and semaphores cannot be *seen at all,* about sixty days in which they can be only seen occasionally, and only about two hundred in which they can be seen the whole of the day. The stations were generally only eight miles apart, and, of course, required a large staff of officers; but the electric telegraph can convey intelligence night and day, in all weathers, and over hundreds or even thousands of miles at a leap, and requires no officers except at the termini."



"Do you think, papa, I could understand how the semaphore was made and worked, if you gave me a drawing of it? I should like to make something of the kind, if I could, with the help of William Hardy. He is a capital carpenter, and I am sure he would like to try."

"Yes," said Mr. Robson, "I think you could, for the arrangements are very simple. Here is a sketch of the semaphore at the Admiralty, when it was in motion;—a lofty pole with three movable arms. When no message is being conveyed, the arms of a semaphore fall flat, and are in a line with the pole. Each arm has a pulley fastened to it, and the pulley and arm turn on an iron spindle. See, A is a part of the arm, P the pulley fixed to it, and I the iron spindle on which they both turn. B is a block of wood in which a groove or pulley is cut, and close by the pulley four handles H are fixed in the block. Now, suppose a rope R is nailed fast in the block B, and carried once round it in the groove, and then carried upwards to the pulley P, turned once round it, and then brought down again to the block B, and again carried once round it and the end nailed fast. Then, if I turn the lower pulley by the handles H, I shall turn the upper pulley P, and the arm that is fixed to it."



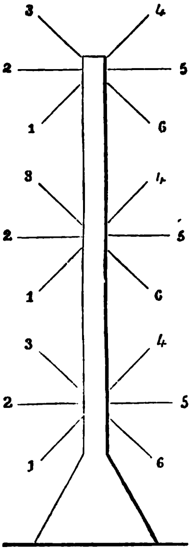
"Yes, papa, I understand that," said James, "and I suppose you have a pulley for every arm."

"Certainly, and three pulleys side by side on the spindle S to work them. These pulleys turn independently of each other, so that one arm can easily be moved without moving another. To keep the arm in the position that is wanted, the arm is balanced by a lump of iron or lead at L."

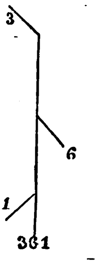
"I think these pulleys, papa, will be rather troublesome things to make," said James. "William Hardy has not a lathe,—and are not pulleys turned in a lathe?"

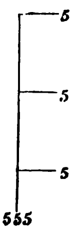
"Yes; but I can take you to a turner's-shop, where you can get some common cheap pulleys ready made. I should advise you to get a pole that could be sunk in the ground and lashed to one of the posts of Mr. Hardy's summer-house, if Mr. Hardy will allow you to do so; or if there be any clothes'-posts in his ground, and the position be good for seeing your cousin's house, you could, when the clothes'-posts are away, place your semaphore-pole in the sunken hole. These holes are always made pretty deep, and lined with wood, so that you would have a firm foundation. The only objection is that you could not use your telegraph when the clothes'-posts are fixed."

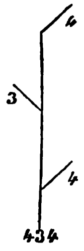
"I must have some talk about that with William Hardy," replied James. "Now for the meaning of the different positions, papa; for I did not clearly understand that part of Mr. Edgeworth's telegraph."



"The most simple mode of making the signals understood is this," replied Mr. Robson. "Each of the arms can be placed in six different positions, as you will see in this figure. Now, let each position represent the numbers I have put down, and let the top arm signify hundreds; the middle, tens; and the lower, units; and then we can easily make a long list of numbers; for the lower arm will represent the numbers 1, 2, 3, 4, 5, 6; the middle arm, 10, 20, 30, 40, 50, 60; and upper arm 100, 200, 300, 400, 500, 600; and, of course, the three arms will represent any combinations of these numbers. Thus, the arms in the position of these little figures would represent the numbers placed below them.







"Having, then, the means to represent a great variety of numbers, we have only to agree that these numbers shall signify certain words or sentences. As I said before, this is done by making a dictionary of numbers and words, and another dictionary of words and numbers, just as you have a dictionary of French words, and *English* meanings, and another dictionary of English words, and *French* meanings. Suppose it was wished, when the semaphore was used at the Admiralty, to send the news from Portsmouth to London, 'Ship arrived, captain well.' The Portsmouth officer would look out for the words in the dictionary of words: first for 'ship,' against which 66 is found.

Arrived	21	Dictionary of words.
Captain	54	
Ship	66	
Well	11	

"Having looked out the other words, he would make the telegraph express 66, 21, 54, 11. As soon as the officer in London observes these numbers, he consults the dictionary of numbers, to translate them, as it were, into words. He then finds opposite 66 the word 'ship,' opposite 21 the word 'arrived,' opposite 54 the word 'captain,' and opposite 11 the word 'well.'

11	Well	Dictionary of numbers.
21	Arrived	
54	Captain	
66	Ship	

"Oh! I can understand your explanation, papa," said James; "I do not think it is very difficult. I can easily imagine now how the most secret communications can take place, from one country to another. The head officers of each station have only to fix upon a very few alterations beforehand in the meaning of the numbers, and the people who work the telegraphs may be kept quite ignorant of the news they are sending from country to country."

"Precisely."

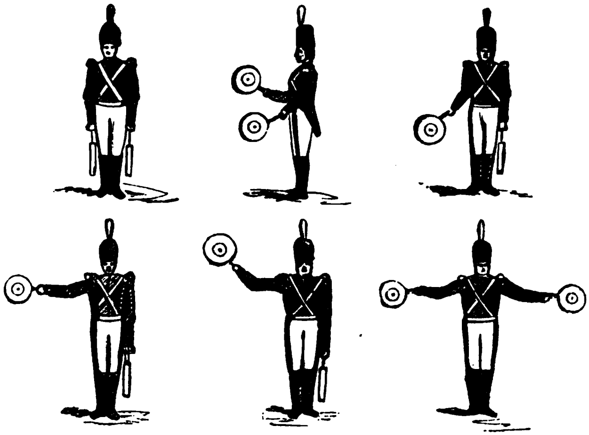
"Signals at sea are generally made by means of flags, of different shapes and colours, placed one above another. If a flag with a notch in it signified 5, three of them, one above another, would, like the telegraph, mean 555. Thus, at the battle of Trafalgar, Nelson telegraphed or signalled, 'England expects every man to do his duty.'

"Bonaparte, when he was conquering one country after another, always established a line of telegraphs from the army to Paris, by which means he sent the news of a victory immediately to Paris, or ordered more soldiers to be sent to him.

"The electric telegraph has been applied, with the greatest advantage, to a similar use during the Indian mutiny. The troops and the followers of the camp, baggage, waggons, elephants and camels, often make a vast procession of thirty or forty miles in length, and then it becomes of great importance that the commander should be able quickly to transmit his orders to the different portions of this huge body, as well as to Calcutta and Bombay.

"There are many more ways of transmitting signals than I have mentioned, James; some very simple. Just before the battle of Trafalgar, a Lieutenant Spratt carried on a long conversation between his own vessel and another by means of a white handkerchief, held in various positions; and a Mr. Spencer invented a means of using men themselves as a telegraph. The men were furnished with two circular discs of wickerwork, about eighteen inches in diameter, with a handle six inches long. The wickerwork was painted white, with a black spot in the centre. The different positions signified the nine numerals and nought; and the meaning of each of these numbers was, of course, understood by the officer who ordered the signals, and by him who received them."

"Oh! this plan would do capitally at school, where the cricket-ground is far from the playground!" exclaimed James; but I shall try it, too, at Hampstead. How much I shall have to tell and explain to William Hardy! To-morrow is a half-holiday. I shall go over and consult him which of the plans we had better try first. The last is the easiest of all, but William Hardy and I and my cousins would get pretty soon tired of standing, if we were not quickly seen and understood. I shall like to try that plan of Mr. Edgeworth's, because boys have worked it; and I like the semaphore, because you have so carefully explained it. Then there will be the dictionary to make."



His father advised him to make signs serve for sentences at first, before they tried more difficult combinations.

James gathered up the sketches together, and, thanking his father, left the library, full of his new project, which he saw would not be fully carried out till the Midsummer holidays, when he should have more time to give to it.

THE FOUR BULLS.

In a large field well fenced with a high, thick hedge lived four bulls, named Buff, Brin, Black, and Dunn. They had a snug shed into which they could go at night, or when it rained. In one corner of the field was a pond, in which the water was so clear that the pebbles could be seen at the bottom.

The bulls were very happy in this pleasant place; and the reason why they were so happy, and were able to enjoy the fresh grass and clear water, was because they were friends, and were not ill-tempered or selfish. Whenever one of the bulls found the grass sweeter in one part of the field than where his brothers were eating, he would not keep all that good grass for himself, but would low, and so call his brothers to come and share it. Not only did these happy bulls feed together, but they played and frisked together, and at night they slept close to one another.

There was a lion that lived in a thicket not far from the field of the four bulls. How he did long to devour one of them! How he did watch to see if he could catch one of them apart from his friends, so that he might spring upon him and tear him to pieces! The bulls were too strong for him to attack all at once; and every day he saw the four bulls feeding side by side.

Sad to tell, the bulls did not remain friends! One day, Brin found a small patch of clover. It was the only clover that had been found in the field. Brin took a mouthful, and as he ate it the taste was so sweet that he lowed with delight. Buff, Black, and Dunn came running up directly. Brin showed them what he had found. The patch of clover was so small that there could not be much more than a mouthful for each, and there was not room for them all to put their heads down to it at once. For the first time since they had been in the field they were greedy. Not one would give way. They pushed and pushed their horns against one another; and in their silly ill-temper they quite spoiled the clover by trampling it down into the ground.

But this was not all the mischief. They fought, and the strongest among them, who was Buff, drove the others, after a long battle, away from the clover. Their necks were torn, and the blood ran from their wounds. Angry, too, with one another, they would no longer be friends, but each went to a part of the field where he could be by himself.

The lion, as usual, in the evening, came to look at the bulls in the field. At first he thought that the bulls had been taken away from the field. He could not see them side by side as he had before seen them.

He prowled along the hedge, and then mounted a little hill from which he could have a better view.

The lion could hardly help giving a growl, he was so glad when he saw the four bulls wide apart from one another. The bull nearest to the place where the lion stood was Buff. The lion made a spring, and in a moment he was over the hedge, and his claws were fastened in Buff's side. Buff roared with pain, and hoped his former friends would come and help him. But they did not go near him. While Buff was dying, how sorry he felt that he had quarrelled with his friends, and he wished he could advise his three brothers to be friends, and to keep together.

The hungry lion tore poor Buff limb from limb, and ate as much as he wanted, leaving the rest to vultures and ravens, who are fond of dead flesh.

While the lion was eating Buff, he roared most loudly with pleasure. His loud roar was heard by the other three bulls. In great fright they left off eating, and looked trembling around. They ran towards one another, and after they had met, they saw the lion spring back over the hedge.

It was a long time before the bulls forgot Buff's sad death, and whenever they felt selfish or ill-tempered they took pains to conquer their ill feelings; and as they lived in friendship with one another, the lion did not venture to attack them.

THE FIRST VOYAGE ROUND THE EARTH.

In the Indian seas, a few degrees on each side of the equator, and between 120 and 130 degrees east longitude, are situated the Molucca Islands.

About the year 1517, the possession of these islands was disputed by the kings of Spain and Portugal. Both kings claimed a right to them.

At that time, the Spaniards and Portuguese were the only two European nations that were much engaged in prosecuting discoveries by sea in the southern regions of the earth: the Spaniards towards the *west,* the Portuguese towards the *east.*

It had been agreed between these two nations that a line drawn from the north to the south pole, passing 370 leagues to the westward of the Azores, should be the boundary of their respective domains. All discoveries that might be made 180 degrees to the west of this line were to belong to the Spaniards, and all discoveries 180 degrees to the east of this same line were to belong to the Portuguese.

If we refer to the excellent and accurate maps and globes which we now have, it is easy to decide that, according to this strange agreement, the

Molucca Islands belonged to the Portuguese, being more than 180 degrees to the west, and, therefore, less than 180 degrees to the east of a line of longitude drawn 370 leagues to the westward of the Azores.

But in those days geographers had not as yet learned how to measure degrees of longitude with accuracy; and it was really impossible to decide which of the two kings had the better imaginary title to the islands in question.

Although thus ignorant, these two kings, with their advisers, were not the less confident in asserting their claims. If either party felt any doubts, they were not honest enough to express them.

The Portuguese had been in the habit, for several years, of sailing to their possessions in the Indian seas, round the Cape of Good Hope; indeed, it had never been attempted to reach the Indian seas, by sailing in any other direction.

Fernando Magellan was the first person to make such an attempt. In consequence of the dispute concerning the Molucca Islands, he offered his services to Charles the Fifth of Spain, to conduct a fleet to those islands by the west, a voyage at that time not even known to be possible. Magellan was persuaded that a passage was to be found by sailing round the American continent; and he offered to take upon himself the hazard of attempting the discovery of it.

Magellan was by birth a Portuguese, and was a clever and educated man. He had been employed by the King of Portugal, but thinking that his services were not properly rewarded, he quitted Portugal, and went to Valladolid in Spain, where he was introduced to Charles the Fifth, who accepted his offers of service, and provided him with a fleet.

The ships entrusted to the command of Magellan were five in number, and were named the Trinidad, the San Antonio, the Vittoria, the Conception, and the Santiago.

With this fleet, Magellan sailed from San Lucar, on the 20th of September, 1519, and arrived without accident on the coast of Brazil. Hence he continued his voyage slowly to the south, and in April, 1520, reached a safe harbour, in nearly fifty degrees of south latitude. He called this harbour Port St. Julian; and here he resolved to pass the winter, which in this part of the world is extremely cold from May to September, the very time when, in our northern latitudes, we have the full enjoyment of summer.

The hardships which the crews of the different ships now began to endure made them discontented and unruly. It was necessary to be very careful with the provisions, which were distributed sparingly. This made the men murmur still more; and urged by some of their officers, they demanded to be conducted back to Spain. Magellan was not to be so easily turned aside from his undertaking, and refused to comply. He was aware that the bad conduct of the sailors was owing to the officers; and he resolved, therefore, to make an example of three of the commanders. Two of them he made prisoners openly, and put them to death. But the destruction of the other he accomplished by treachery.

The name of this last was Luis de Mendoza, the commander of the Vittoria. Magellan sent one of his men to the Vittoria, under some false pretence, with instructions, if he could find an opportunity, to put Mendoza to death. The man not being suspected was readily admitted to the ship, and while Mendoza was listening to the pretended message the man stabbed him.

By this means an end was put to the mutiny. But so strong a feeling of dissatisfaction still existed in the fleet, that Magellan found himself obliged to permit one of the vessels, the San Antonio, with its crew, to return to Spain. In the month of October, the commencement of the southern summer, with the four other ships he set sail from Port St. Julian. Unfortunately, however, in quitting that harbour, the Santiago was wrecked; and Magellan was then left with only three ships to continue his voyage.

In a few days he reached the Strait, which still bears the name of its discoverer, "The Strait of Magellan," situated at the southern extremity of the continent of South America.

Magellan felt confident, on entering this opening, that it was a channel or communication between two great oceans: 1st, because there was a strong current running towards the west, whereas if he had been at the mouth of a river, the current would have been towards him, that is, to the east: 2nd, because upon sounding for the depth, no bottom was to be found. He resolved therefore to proceed, and on the 28th day of November, 1520, the three ships cleared the Straits.

Great, indeed, was the joy of Magellan and the three crews at finding a passage by sea to the Pacific Ocean, that ocean which had first been discovered, near the Isthmus of Darien, by Balboa, one of the many Spanish adventurers who followed in the wake of Columbus, and a passage to which had long been an object of research.

Magellan was three months and twenty days in crossing this Ocean from the Straits, which bear his name, to the Philippine Isles, where he arrived the 16th March, 1521. During his passage, he fell in with only two islands, which, on account of their desolate appearance, he called the "Desventuradas," or "Unhappy." It so happened that he did not come within sight of any of the numerous and well-peopled islands, which have since been discovered in those seas.

Magellan was the discoverer of the Philippine Islands. That cluster of islands received their name some years afterwards, when they were conquered by the Spaniards, in the reign of Philip II., their king. Magellan went on shore immediately upon his arrival, and was kindly received by the King of Zebu. It would appear that this king was at war with one of the neighbouring chiefs, and Magellan was foolish enough to make himself a party in the quarrel. He offered to assist the King of Zebu, with some of his crew and their fire-arms; and the King was of course glad to receive the aid of such powerful allies.

The Spaniards soon had cause to repent of their folly. They had no sooner entered the hostile territory, with Magellan at their head, than they found themselves surrounded by a large multitude, who attacked them with stones and other missiles. The Spaniards relied with too much confidence upon the effect which their fire-arms would produce upon the ignorant natives. They had been accustomed to expect victory from the mere report of their weapons. But the natives of these islands were not so timid a race as the unfortunate Indians, that the Spaniards had lately treated with so much cruelty. They stood their ground; and the Spaniards, finding that their ammunition was all spent, began to retreat. As they gave way, the natives redoubled their attacks. Several of the Spaniards were killed, and others were grievously wounded. A large stone struck Magellan on the head, a second broke his thigh, and as he fell a shower of lances deprived him of life.

Thus perished Magellan, having completed the boldest navigation, excepting that of Columbus, which had been as yet accomplished, or has since been attempted. It was owing to his inexcusable folly that he did not survive to return to Europe, and receive the congratulations of his admiring friends and countrymen.

On the death of Magellan, the King of Zebu, for whom he had so wantonly hazarded his life, forgetting his pretended friendship for the Spaniards, treacherously put to death all of them who remained upon the island. Those who were on board the ships, when they learned the melancholy news of the slaughter of their companions and their chief, finding their numbers too small to manage three vessels, burnt the Conception, and with the other two went in search of the Moluccas.

In their voyage thither, they touched at several points on the eastern coast of Borneo, passed to the north of Celebes, and at length arrived at Tidor, one of the Moluccas, where they were kindly received by the king of the islands. The Trinidad being leaky, remained there some time to repair, and afterwards attempted to return by the Pacific Ocean; but meeting with contrary winds, was once more obliged to steer for the Moluccas, at one of which she arrived in a sinking state, and the crew were made prisoners by the Portuguese, who had possession of that island.

Meanwhile the Vittoria, under the command of Sebastian del Cano, proceeded on her voyage homeward, round the Cape of Good Hope, and arrived at San Lucar on the 6th September, 1522.

The crew were suffering much from the fatigues of a voyage which had lasted rather more than three years. But the distinction and honour with which they were received by their countrymen, for having succeeded in so bold an adventure, soon made them forget the labours and hardships which they had endured in this the first voyage round the world.

The Vittoria was drawn ashore, and long preserved in remembrance of this most remarkable voyage.

When Sebastian del Cano arrived at San Lucar, he was surprised to find that he had lost a day in his reckoning. According to the account which had been regularly kept on board the Vittoria during the whole voyage, he appeared to arrive in port on the 5th September; but, according to the reckoning kept on land, the day of his arrival was the 6th September. And as he felt confident that there could not possibly be any mistake in his own reckoning, he was quite at a loss, and so also were his friends in Spain, to explain how two accounts, each kept with equal care, should differ in their result.

In those days the only method of marking time that was used on board of ships was by the sun; and although Sebastian del Cano was puzzled to account for his loss of a day, the puzzle with us would be how he could possibly go round the earth, from east to west, without appearing to lose a day.

The course of the ship being from east to west, while the daily rotation of the earth is from west to east, if we could but imagine the speed of the ship in one direction to be equal to that of the earth in the other,—that is, the whole circumference of the earth in twenty-four hours, how would the sun appear to the ship's crew? The answer is plain: the sun would not appear to change its position during the whole voyage. Supposing such a ship to start from a port at mid-day, the crew of that ship would perform the whole of the voyage at mid-day, and they would return into port at mid-day. But their friends on land, during the same period, would have seen the sun set and rise, and again come to the meridian; and the crew would consequently have lost a day in their reckoning.

Although the Vittoria did not sail round the earth in her course from east to west at so rapid a rate, her crew did not the less lose a day in their reckoning. Had that vessel sailed round the earth in an opposite direction, that is, from west to east, Sebastian del Cano would have found by his reckoning that, instead of losing a day, he would have gained a day, and marked one day more than his friends on land.

One of the greatest improvements that have been made since the time of Magellan to assist the navigator is the chronometer, or time-measurer. "Chronometer" is a word composed of two Greek words, which signify "time-measurer."

A chronometer is a watch made with so much care and skill as to go with almost perfect accuracy. The captain of a ship who takes a chronometer to sea, always knows, wherever he may be, the hour of the day at the place from which he started. And this again assists him to the knowledge of the part of the sea in which he is.

Suppose, for example, a navigator were to sail from San Lucar with one of these chronometers at noon, and after being some time at sea, were to observe that when it was noon by the sun it was one o'clock by the chronometer, that is, at San Lucar; he would then know that he was 15 degrees to the west of San Lucar, because in one hour the earth revolves as much as 15 degrees. And as there are means well known to nautical men, by which the latitude can be ascertained, he would know exactly by his chart whereabouts on the wide sea he was situated.

In his progress westward, the chronometer would be one hour more in advance of the sun for every additional 15 degrees of longitude; and on his arrival back in the port from which he started, he would be 24 hours, or one day, as marked by the sun, behind the chronometer, because there are exactly twenty-four fifteens in 360 degrees, the whole circumference of the globe.

If while it was noon by the sun, the chronometer were to mark eleven o'clock in the day, he would then know that he was 15 degrees to the east of San Lucar. Continuing to sail eastward, the sun would gain upon the chronometer one hour for every 15 degrees of longitude; so that by the time he returned into the port from which he started, he would have marked one day more by the sun than by his chronometer.

The captains of vessels which are now continually sailing from England to Australia are well acquainted with this fact. They proceed round the Cape of Good Hope to Sydney, Melbourne, or Adelaide, and return round Cape Horn to London; thus pursuing an eastern course throughout their voyage, and finding on their arrival that they have marked one day more by the sun than by the chronometer.

UNCLE JOHN IN ICELAND.

"UNCLE JOHN," said Oliver to his Uncle, "have you ever been in Italy, and seen that terrible volcano, Mount Vesuvius?"

"No, Oliver," replied his Uncle, "I have not, but I have seen quite as terrible a volcano as Vesuvius: Mount ——"

"Mount Etna," interrupted Oliver, "I suppose you mean, Uncle."

"Patiently, my young friend," said Uncle John. "I do not mean Mount Etna. The volcano that I have visited is situated in a very cold country, where the whole surface of the ground is covered with snow, often more than three feet in depth, and the ice remains unmelted during the greater part of the year."

"What can you mean?" said Oliver; "you are laughing at me: I never heard of volcanoes in cold countries."

"Perhaps not," said his uncle; "and yet what I tell you is a fact. You must read a little more, and think a little more, and see a little more of the world, before you can know much of the wonders and curiosities that are in it."

"When I am old enough," said Oliver, "I shall be a sailor, and then I can easily see all the wonders; and that will be better than troubling myself to hunt in books for an account of them."

"Now I laugh," replied his Uncle. "The trouble of hunting in books, as you call it, is ease, compared to the hardships and toil of a sailor's life. If you think a sailor's life is an easy one, you are much mistaken. You must prepare yourself for trouble, and danger, and sufferings, such as at present you have no idea of."

"I am not afraid of hardships," said Oliver; "and as to danger, that gives one something to think about; so that, Uncle John, you cannot frighten me."

His uncle laughed, and said, "I do not wish to frighten you; I only wish you to know that a sailor's life has more of toil and danger than you seem to suppose; and that when the wind blows, and the ship is buffeted about by the waves, like a shuttlecock by a battledore, you might find hunting in books, by a warm fire, a pleasanter affair than to be out at sea just then."

"Never mind about all that now," said Oliver; "but tell us something, dear Uncle, of this *cold* volcano that you have seen."

"Nay, a *hot* volcano in a *cold* country," replied his Uncle; "I dare say Richard knows something about it. Come here, Richard; put down your slate awhile, and help Oliver to the name of a volcano in a cold country."

"Is it situated in Europe?" asked Richard.

"Yes," said his Uncle.

"You mean Mount Hecla, in Iceland," replied Richard.

"Now tell us the situation of Iceland, and then I will tell you something about the country and people," said his Uncle.

"Iceland," said Richard, looking at the map, "is a large island in the North Sea, between Greenland and Norway. It lies between 63 degrees and 67 degrees of north latitude, and between 11 degrees and 27 degrees of west longitude."

"Very right," replied his Uncle, "and it is not above forty miles from the east coast of Greenland. The island is four hundred miles in length, and more than one hundred and sixty in breadth. It is nearly as large as England and Wales; but I can assure you it is not so pleasant a place to live in."

"I should think not with that volcano," said Arthur. "I do not like those burning mountains."

"Iceland appears a dismal, dreary place to a person who has been accustomed to live among corn-fields, and to see the fine elm, oak, beech, and other trees that grow here. In Iceland there are no beautiful fields, either of corn or grass, no fine trees, no pleasant villages, nor gay flower-gardens. It is a country of rocks and rugged mountains, and is covered with snow and ice, which, in some parts, never melt,—not to mention the lava, by which the country has been laid waste for many miles together."

"And can such a country be inhabited?" asked Oliver.

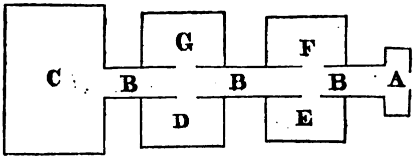
"Yes," said his Uncle; "and there are many other countries inhabited, which are still more uncomfortable; Greenland, for instance, where the suffering from cold is much greater. I spent a pleasant time in Iceland, although I felt a little uncomfortable at first.

"It was in the summer that I landed at Bessesstedr, which is one of the principal places, and on the southern coast of the island. I certainly thought the country looked very dismal, for I was thinking of the beautiful Isle of Wight we had left so lately. I could see nothing but barren mountains, with small spots of rank, coarse grass, and plains of lava; and although it was summer time, every here and there the snow was lying unmelted; in some hollows more than three feet deep. I wondered how such a place could be inhabited, just as you do, Oliver. But I soon found so many new and curious things to look at, that I forgot the dismals which at first annoyed me. What do you think the people generally build their houses with?"

"I do not know," said Oliver; "bricks and wood, I suppose."

"Most of the houses are built of lava; and as the pieces of lava do not always join closely together, small bits of moss are stuffed into the chinks. The roof is made of rafters of wood, or ribs of whales, upon which sods of turf are thickly laid. These houses are small, being no more than nine feet in height, and consisting only of the ground floor. Lend me your slate, Richard, and I will draw you the ground plan of a house in Iceland."

Richard gave the slate, and Uncle John drew this plan:—



"Where I have written the letter A," said he, "is the entrance, B B B is the passage, which runs through the middle of the house, about six feet wide. This passage is lighted by holes, or windows, in the roof; but excepting that these holes admit some light, they have not much resemblance to our windows. I will explain to you the whole contrivance.

Instead of glass, the people use a thin skin, which lines the stomachs of their sheep. The round holes in the roof have wooden hoops fitted into them, upon which this skin is tightly stretched; and thus the light is admitted, and the cold air kept out. But you cannot see through the skin."

"What! have they no glass for their windows?" said Arthur.

"Only in the very best houses. At the end of the passage is a room, C, usually from twenty-four to twenty-eight feet long, and from twelve to sixteen feet wide, in which the women sit at their work during the day, and the master of the house sleeps at night. This is the only comfortable room in an Iceland house; for it has a ceiling and floor, and a few small windows, sometimes made of glass, but more often of the skin I have mentioned, and the walls are lined with wainscot."

"And what are the other four rooms used for?" asked Richard.

"The one marked D is the kitchen, E the eating-room, F the dairy, and G the servants' room. All these rooms have neither ceilings nor floors, and the walls are not lined. The windows are made of skin, and in the roof."

"But when the rain or snow falls heavily, Uncle," said Oliver, "I should think the skin would break or soak through."

"As a defence against this, there is a wooden shutter," said his Uncle, "which the Icelanders let down upon the window in stormy weather."

"Then they must put themselves in the dark;—how disagreeable!" said Arthur.

"They light their lamps, and do not grumble at what they cannot prevent or avoid," said his Uncle. "They have no chimneys, not even in their kitchens. The fire used for cooking is made between three stones on the hearth, and the smoke finds its way out through a hole in the roof."

"I think our English houses are much more comfortable," said Oliver.

"There can be no doubt of that," replied his Uncle; "and also that the climate of England is much pleasanter than that of Iceland. At the side of the dwelling-house is a stable for the cattle, and a shed for the dried fish."

"But, Uncle, if no wood grows in Iceland, what can the people do for fuel, for I suppose they have no coal?" asked Richard.

"Not any like ours; but I will tell you how they manage," said his uncle. "There is a kind of wood-coal, of a brown colour, called by the natives 'suturbrand,' which is dug out of marshy grounds. The earthy varieties of this suturbrand hold together, and do not rot as long as they are kept in water, but drop to pieces as soon as they are brought into the air.

The fibrous kind exactly resembles the coal found near Bovey Tracey, in Devonshire. It is very valuable to the natives, for it yields a bright, though weak flame, and a prodigious heat; although the smell while burning is not pleasant, being sourish. It is preferred by the blacksmiths to coal, of which they sometimes obtain a small supply from the ships —it yields so much more heat."

"Is this suturbrand found all over the island?" asked Richard.

"No; generally among the mountains, where now not even a small shrub is to be found growing. I believe there is little doubt that it is wood, for on parts of it, less hardened than others, evident marks of branches, and the circles of the annual growth of the tree may be seen. The impression of leaves and bark also is to be found in the clay which surrounds the bed of this suturbrand. The Icelanders make use of turf and fern, likewise, as fuel, and the roots of large trees that have been destroyed, it is supposed, by the volcanoes, and which are found in the ground a little below the surface. The stunted trees that grow upon the island are used both for firing and for making furniture. Another supply of wood is obtained, in a way that you would little expect. On the north-west coast, a quantity of floating timber is drifted every year, supposed to come from America. This drift wood is, of course, much prized by the people, and is generally used for burning."

"Have the people any fruit trees?" asked Arthur.

"A few bushes, but no trees," said Uncle John. "I did not see above ten gardens, and I visited a large part of the island. The gooseberry bushes appeared to grow well, and to produce fine fruit; and beans, peas, and cabbages, all grow well. The Iceland summer is just long enough to allow these things to come to perfection."

"Is wheat grown in Iceland?" asked Richard.

"No; the summer is too short to bring that to maturity. A little barley and rye have been occasionally grown, but the growth of even these is uncertain."

"Have the people no bread, then?" asked Oliver.

"During my stay in Iceland," said his Uncle, "I saw no bread; we had now and then some sour biscuits brought from Copenhagen."

"What had you to eat, I wonder?" said the boys.

"Dried fish, spread with sour butter, fresh and salt fish, the flesh of bears, sheep, and oxen, and of birds, partly salted, partly smoked; plenty of sour butter, which the people are very fond of, although it is full of hairs, for in their dairies they do not take the trouble to strain the milk through a sieve as we do in this country; sour whey and curds, and a sort of jelly made by boiling the bones of fish and animals in whey till they are dissolved. These things formed our general food; but every now and then we had a treat of shark and whale."

"Oh, Uncle! shark and whale, sour hairy butter, and other sour things!" cried Oliver and Arthur; "and could you really eat such nasty stuff?"

"Yes, I contrived to satisfy my hunger tolerably well," said their Uncle; "I only remember one thing that I could not eat, and that was fish nearly rotten, which I have seen the people eat voraciously."

"Well, Uncle, with plenty of fresh fish at hand, I think the Icelanders are a very filthy people to eat rotten fish," said Oliver.

"And why do they eat sour butter and sour whey, Uncle? Why should they let their food spoil before they eat it?" said Richard.

"My young friends," said Uncle John, "the Icelanders would answer that question by putting another to you. They would say, 'Why eat food that is not ripe and good?' These people only prize their butter when it has become sour. They do not use it either fresh or salted. When the butter has become sour, it will keep twenty years or longer, and the Icelanders consider it more pleasant and more wholesome too, than when eaten fresh."

"How very strange!" said Oliver; "I should not be able to eat it. If I am ever in Iceland, I shall go without butter, or I shall take some kegs of ready salted butter with me."

"Ha, ha, ha! that would not avail you much," said his Uncle. "Do you know, friend Oliver, that these people use sour butter and sour whey, not only as the sauces to their food, but they positively cook the different articles of food in them. Meat is boiled in the whey, which they call *syra.*"

"Pray tell us, Uncle, what your breakfast and dinner did really consist of," said Oliver.

"In the house that I stayed at," said his Uncle, "we breakfasted at seven o'clock in the morning, on hard curds, mixed with new milk or with juniper berries, or on hard curdled milk, boiled till it became quite of a red colour. At two o'clock we had dinner, and then we had dried or fresh fish, with plenty of sour butter, and sometimes we had meat boiled in the syra, not a very pleasant broth. This was our common every-day fare. But when the richer Icelanders invite their friends to dinner, they give the additional treat of a dessert of shark and whale."

"What a dessert!" said the boys.

"I was invited to a dinner-party one day, and the dinner and dessert were reckoned very excellent. In the middle of the table was placed a dish of dried fish, cut up into very small pieces, and at the sides some roast mutton, syra broth, and salmon; plenty of sour butter being poured over the different dishes. When these were removed some of the flesh of the shark and whale, which, from the manner of preparing it, looked like rusty bacon, was placed upon the table."

"And how did this dessert, this preserved shark, taste?" said Oliver.

"The little bit that I tasted was so unpleasant, that I took no more," replied his uncle; "it had one good effect, it made the mutton that I had eaten appear quite delicious."

"Now, uncle," said Oliver, "let us talk no more of their eating or way of living, but tell us about the volcano."

"Willingly," said his Uncle, "for Hecla, I must allow, was much more attractive and interesting to me than either sour butter or shark's flesh. This volcano is only four miles from the sea-shore, and is visible to all ships passing that way. Mount Hecla has three distinct tops. As I wished to see every thing curious in this remote and little-visited part of the world, I determined to climb up to the highest of these three points, which is 3,700 feet above the level of the sea. The state of the surrounding country shows how terrible have been the eruptions from this volcano. I travelled over fifty or sixty miles of lava, before I arrived at the foot of the mountain. With very few exceptions, the whole island appears to have been laid waste at different times with lava. Fiery eruptions, accompanied by earthquakes, are continually bursting forth in all parts of the country, and many of the snowy mountains have become volcanoes in the recollection of people living. An island of fire one night arose from the sea close by Iceland, and still remains."

"Mount Hecla, if I remember right, is higher than Vesuvius," said Oliver.

"Yes," said his uncle; "since the famous eruption of 1822, when eight hundred feet of the cone of Vesuvius were blown off. Its eruptions, also, have been much more extensive. In one eruption, the ashes were thrown to the distance of one hundred and eighty miles. During my stay in Iceland, the mountain remained perfectly quiet: the smoke issuing from it alone made known to us that it was a volcano. The eruptions have made several openings up the sides of the mountain. In most of the openings marks of boiling water are to be seen, and the steam came out so hot, that the degree of heat was beyond what could be measured by our thermometer. As we ascended, we found the mountain covered with snow."

"Did you go quite up to the top?" said Arthur.

"Yes; and although the cold was so intense, that the thermometer fell to 24 degrees below freezing point, the steam from the various holes in the mountain was hotter than we could measure. The wind, also, was so high as we approached the top, that we were sometimes obliged to lie flat on the ground to avoid being blown down frightful precipices by its fury. The snow was all melted at the very top for about the space of eight yards."

"The feeling of heat and cold at the same time," said Richard, "must have been very strange; for while your bodies shivered, your feet must have been quite warm."

"Has Mount Hecla had an eruption lately?" asked Arthur.

"I have not heard of one since 1766, when the eruption lasted from the 4th of April to the 7th of September, and destroyed many fields and farms. It seldom happens that the volcanoes begin to throw out fire without some previous warning. A loud rumbling noise, and cracking of the earth, and sometimes earthquakes, generally precede an eruption for several days."

"Do the springs dry up as in Italy?" asked Richard.

"When the springs and small lakes and rivulets dry up," continued his uncle, "an eruption is always considered to be impending. But the first thing that is usually observed before the eruption of fire, is the cracking of the ice, which bursts, as it were, with a dreadful noise. Then come the flames and lightnings; and balls of fire, which issue with the smoke, may be seen many miles off. Stones are also cast out and thrown to a great distance, and last come the boiling water and lava, black pumice-stones, and sand and ashes. But besides these volcanoes, there are springs of hot water in all parts of the island."

"What a curious country Iceland must be," said Oliver, "to be covered during half the year with snow and ice, and yet to have springs of hot water coming out of the ground."

"But so it is," said his uncle. "In some parts of the country, the springs issue from the ground boiling hot; in other places the heat is more moderate, and not greater than is agreeable to drink or to use as a bath."

"Do the people make any use of these springs?" said Richard.

"They use the water for cooking, as well as for drinking, and they cool it for their cattle. But they also cook in the very springs. The day that I visited the Geyser, which is the most surprising of these fountains, our dinner was cooked in one of the smaller boiling springs. We had some salmon and a ptarmigan boiled. The bird was cooked in six minutes."

"But how do the people cook in these springs?" asked Arthur. "Do they throw the fish and meat into them?"

"That would be a curious way of cooking, friend Arthur," said his uncle. "How do you think the food could be got out again? Is it pleasant to plunge your hands into boiling water?"

"That would be like playing at snap-dragon for dinner," said Oliver.

"Have you ever seen a party of gipsies boiling their kettle in a lane, or by the road side? Because the same contrivance to hold the kettle is used by the Icelanders, and sticks or stakes, fastened together at the top, are placed across the spring. From the top of these sticks hangs the kettle."

"To what height do the springs rise?" asked Richard.

"The height is as various as are the colour and heat of the water. Some rose five, some ten, and some twenty feet; while others rose so high, as to be lost in the clouds. The hot springs at Geyser are the most remarkable. Here a marsh extends about half a mile in circumference, where are forty or fifty boiling springs, from which a great vapour ascends. In the midst of these springs, is an enormous fountain, which by starts, at certain intervals, rises from twenty to sixty feet, with a stupendous roar."

"What a beautiful sight that must have been!" said Richard.

"Yes, and well worth a voyage to Iceland," replied Uncle John. "The opening from which the water rose in this large spring was perfectly round, and nineteen feet in diameter, and around it the water had formed a basin nearly sixty feet in diameter, and nine feet deep. The earth trembles; and noises, just like the discharge of a cannon, are heard before the boiling water spouts forth. We wanted to ascertain how deep the opening might be, but we could not succeed. The stones that we threw in were all thrown up again into the air by the force of the water. The whole scene was so remarkable, that it will never leave my memory. I was told that this spring had once risen to the height of sixty fathoms."

"Sixty fathoms! why, that is three hundred and sixty feet!" said Oliver.

"Did you put the thermometer into any of these springs?" asked Richard, "and did you really find them of boiling heat?"

"In some of the springs," replied his uncle, "the thermometer rose to 212 degrees and 213 degrees, in others to 188 degrees. At Geyser it stood at 212 degrees (which is the heat of boiling water)."

"Are the Icelanders a happy people?" asked Arthur.

"Before I can answer that question, I must know what you mean by happy," said his uncle. "I never heard any noise such as you make at a game of romps, for the Icelanders are very grave. But people may be happy without laughing, if they are contented. They are seldom idle, for when the weather obliges them to be within doors, they have wool to prepare and spin and weave into cloth, which they call 'wadmal;' and then of an evening they play at chess, and repeat wonderful tales, or read the history of their island, and of the sufferings that the inhabitants have endured from cold, and from eruptions of the volcano."

"What animals have they?" said Oliver.

"Cows, sheep, pigs, horses, and a few goats. Dogs and cats are quite as abundant as in this country, and so are foxes. They have also a few reindeer."

"They have bears, too?" said Oliver.

"No, not living in the island," said his uncle. "But they have unpleasant visits from the white polar bear every winter. These bears arrive on the large pieces of ice which float regularly every year to the N.W. side of the island, and block up the shores."

"Where does this ice come from?" said Arthur.

"From the coast of Greenland, and the North Polar Seas," said his uncle. "This ice arrives during the winter, and generally moves away again in March. It causes great misery to the poor Icelanders, for when the quantity is large, the cold is so intense as to chill the country sufficiently to check all vegetation during the following summer, and to freeze the lakes so as to prevent fishing. It is frequently in large masses, which rise more than fifty feet above the level of the sea. The field ice, however, does the greatest mischief, for being only from four to eight feet thick, it comes close to the shore, and covers the whole surface of the sea. The island obtained its name originally from these masses of ice."

"And the polar bear comes with this ice, uncle?" said Arthur.

"Yes, every year the bears come on the ice. Very hungry they are when they arrive, and they attack the sheep and cattle with great voracity. As soon as the people are aware that any of these intruders have arrived, they assemble together to go out to attack them. But as the Icelanders have few fire-arms, the battle is somewhat dangerous. They contrive, however, with their long spears either to drive the bears back to the ice, with which they sometimes float away again, or else to kill them. They prefer to kill them, because the flesh of the bear is esteemed good eating, and the skin is very useful. For this reason they will also at times go out in boats and attack the bears on the ice, before they can succeed in landing."

"It must be fine fun to set the bears afloat again on the ice, and see them drift away," said Oliver.

"So necessary," continued his uncle, "is the business of fishing, that not only those who live on the coast, but those who live inland, come to the sea-shore at certain seasons of the year to provide a store of this their principal food. Everybody is provided with a fishing dress."

"What are these dresses made of?" said Arthur.

"Of the skins of sheep or calves, well rubbed with train oil. The men fish and bring the cargoes to the women, whose business it is to dry what is to be kept for winter use. Next to fishing, they consider the care of their sheep as their most important occupation. In spite of the cold and the snow-storms, these animals thrive well, and are generally out in the open country the best part of the winter. It is curious to see the sheep in a snow-storm. I should tell you, though, that the lava thrown out by the volcanoes, together with the earthquakes, has formed large caves all over the island. To these caves the cattle and sheep retreat in stormy weather. Sometimes, however, they are caught in a storm at a distance from any places of shelter."

"Then the poor sheep are buried in the snow and are killed, I suppose," said Arthur.

"No, they generally contrive to avoid that, Arthur," said his uncle. "They form themselves into a compact body with their heads towards the middle, and bent towards the ground. They can remain in this position two or three days."

"Without eating?" said Oliver.

"I believe so," said his uncle, "but the owner never exposes them to such a trial if he can help it. They are generally sought for, and brought home in time to prevent much suffering from hunger."

"You have told us of the fish and the cattle, but you have not said what birds they have," said Richard.

"I mentioned eating a ptarmigan for my dinner, and they have woodcocks, snipes, and partridges in abundance; fowls, also, and ducks, geese, and swans, and that valuable bird called the Eider duck. The swan is a constant inhabitant of the rivers and lakes, but the Eider duck is a bird of passage, and only visits them in the summer. The eggs, flesh, and, above all, the feathers of this bird, are of great use. The Eider ducks build their nests on little islands not far from the shore. They make their nest of the down which is so much prized, and which they pluck from themselves, and they cover the eggs with the same. They are so tame as to suffer the people to lift them off their nests while they take away the greater part of the eggs and down. The mother bird, when again placed on the nest, plucks fresh down from herself, and lays more eggs. If she has not down sufficient, the male bird comes to her assistance, and covers the eggs with some of his down."

"And do the people take all that away?" said Arthur.

"No, that would be very foolish," said his uncle. "The last eggs are left to be hatched. When the young ones come out from the shell, they only remain about an hour in the nest, and then quit it together with their mother. All the down left in the nest is, of course, taken by the natives. It is curious that so long as the female sits on the nest, the male continues on the watch near the shore; but no sooner are the young ones hatched than he leaves them. Not so the mother, she remains with her young brood, leads them carefully out of the nest, and goes before them to the shore. When they reach the water-side, she takes them on her back and swims with them a distance of some yards, when she dives, and the young ones are left floating on the water, and are obliged to help themselves. This takes place in September."

"And does not the mother come back to the poor little things?" said Arthur.

"No," said his uncle. "Both old and young are seldom seen again that year; they move off for the season. They come again in the following June."

"Is Iceland much visited by the people of other countries?" said Richard.

"No, the only trade carried on is with Denmark," replied Uncle John; "and it was a Danish merchant with whom I happened to be acquainted who persuaded me to accompany him on an excursion thither."

COUNTRY RAMBLES.

Oh, come, dear children, come with me,
 Come to the meadows fair;
Look where we will, this lovely morn,
 There's beauty everywhere.

There's beauty in the soft green grass
 We tread beneath our feet;
There's beauty in the clouds that pass
 Above our heads so fleet.

There's beauty in the simple flowers
 That deck the infant spring,
And in the sunny April showers
 That fresh bright verdure bring.

There's beauty in the sportive lambs
  That gaily bound away,
And in their quiet timid dams
  That love to see them play.

There's beauty in the insect throng
  That rise on buoyant wings,
Or on the stream that skim along;
  Dark, shining, glistening things!

There's beauty in each happy bird,
  Whose song of life and glee
From yonder leafy grove is heard,
  Telling of liberty!

There's beauty in the glorious sun,
  And in the modest moon,
That waits till his bright course hath run,
  To grace night's starry noon.

And oh! there's beauty far more bright
  Than I can e'er declare,
Robed in a veil of heavenly light.
  There's beauty everywhere!

SCHOOL JURY TRIAL,*

NUTWOOD ASSIZES.

FRANK BARNARD *versus* HENRY MORTON.

THE jury having been chosen, the Prosecutor-General opened the case as follows:

Mr. President, Gentlemen of the Jury—This is an action brought by Frank Barnard against Henry Morton, to obtain redress for damage done to his book; and I will beg you to consider that this action is not so much to obtain compensation for the injury done to the book, as to punish the defendant for the malicious intent with which he committed this injury. And I hope, gentlemen of the jury, you will return such a verdict as will show the great detestation in which you hold anything that is connected with malice. We lay the damages at one thousand transable marks.* I shall now proceed to bring before you the witnesses, and shall begin with the defendant himself, Henry Morton, whose examination, though much to the purpose, will, I expect, be very short.

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* This trial took place at a school where for many years much of the government has been entrusted to the boys themselves. It will be seen that not only, as in Scotland, there is a Prosecutor-General, but also a Defender-General, whose duty it is, without payment from the accused, to do all that justice requires for the defence. In the following trial, however, both the Prosecutor-General and the Defender-General acted as ordinary counsel.

Henry Morton was called into court.

Pro.-Gen. (*holding up a book.*)—Did you scribble this writing in Frank Barnard's book?

Henry Morton.—Yes.

Pro.-Gen.—Very well. I have no more questions to ask you.

Frank Barnard was then called into court.

Prosecutor-General.—Do you hold any office?

Frank Barnard.—Yes: I keep order in the refectory during supper.

Pro.-Gen.—Did you ever have occasion to remonstrate with the defendant?

Frank Barnard.—Yes; he behaved so ill once, that I was obliged to bring Mr. Thornton (one of the masters) to him.

Pro.-Gen.—Was his conduct improved the next evening?

Frank Barnard.—Not at all. I was obliged to threaten him, by telling him that I should again go to Mr. Thornton.

Pro.-Gen.—When you heard that the defendant had injured your book, did any thing rush into your mind?

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* Transferable marks are school-coins received in payment of fines, and serving, in some respects, as money.

Frank Barnard.—Yes, it immediately occurred to me that he had done me this injury in revenge for my taking severe measures against him, a little while before, in the supper-room.

Pro.-Gen.—You were not surprised, then, when you heard that it was he?

Frank Barnard.—No. From the manner in which he conducted himself on the evening before mentioned I had little reason to expect gentlemanly behaviour from him.

Pro.-Gen.—Was your book free from injury at the time when the defendant scribbled in it?

Frank Barnard.—Yes. It was a new book.

The Defender-General having declined to cross-examine this witness, Mr. Malcolm (one of the masters) was called into court.

Pro.-Gen.—Have you ever had to notice dishonourable conduct in the defendant?

Mr. Malcolm.—I am sorry to say that I have.

Pro.-Gen.—Then, from that you would expect him to be guilty of a malicious act?

Mr. Malcolm.—I cannot say I have ever known the defendant show a malicious disposition; but, unfortunately, I have reason to believe that his conduct has, in some instances, been dishonourable.

Pro.-Gen.—But I mean you were not surprised when you heard that he had misconducted himself so far

Mr. Malcolm.—No, I cannot say that I was.

The evidence for the plaintiff having closed, the Defender-General arose, and thus began.

Mr. President, Gentlemen of the Jury—It is my intention to prove, as well as I am able, that the injury committed by the defendant was not done through malice, but merely through inadvertency; and that the same circumstances would have happened, had it been any one else's book than the plaintiff's.

Henry Morton was then called into court.

Def.-Gen.—Why did you scribble in the plaintiff's book?

Henry Morton.—Because I had a new pen, and I wished to try it. (A laugh.)

Def.-Gen.—Did you see the plaintiff's name in it?

Henry Morton.—Yes.

Def.-Gen.—Had it been any one else's book, should you have tried your pen in it?

Henry Morton.—Yes, I think I should.

Cross-examined by the Prosecutor-General.—Why did you scribble in the plaintiff's book?

Henry Morton.—To try my pen.

Pro.-Gen.—What is your usual way of trying your pen?

Henry Morton.—On a piece of paper. (A laugh.)

Pro.-Gen.—But I mean how do you ascertain whether your pen is a good one or not?

Henry Morton.—By writing a word.

Pro.-Gen.—Well, when you had written a word, why did not you discontinue?

Henry Morton.—Because, though a pen may be a bad one at first, yet sometimes after one has written a little, it improves; and I thought this might be the case with mine.

Pro.-Gen.—Were you sorry when you had done it?

Henry Morton.—No.

Pro.-Gen.—Were you glad?

Henry Morton.—No.

Pro.-Gen.—What did you think would be the consequences?

Henry Morton.—I don't know exactly; but I did not think the plaintiff would take such wonderful notice of it.

Pro.-Gen.—You say you did not do it through malice?

Henry Morton.—Yes; if I had done it through malice, I should have concealed it. As it is, if it had not been for my owning it, I might have got off very well.

Pro.-Gen.—Do you call telling a lie getting off very well?

Henry Morton.—No.

Pro.-Gen.—I think, Gentlemen of the Jury, it has been sufficiently proved, that this injury was committed with malicious intent. The defendant has given by no means clear answers to some of my questions. I again beg you to consider, that the damages for which I call are not so much for the injury itself, as for the malice with which the injury was committed.

The Defender-General then closed his case in the following manner:—

Mr. President, Gentlemen of the Jury—I do not think that the Prosecutor-General has proved that there was malice in the business; had the defendant done this through malice, he would have kept it to himself; no one would have known of the fact, and he would have saved himself all this trouble. I think one thousand marks decidedly too great damages for so slight an injury.

The Judge, having summed up the evidence, the jury retired, but returned in a few minutes, with a verdict for the plaintiff;—Damages, 500 transferable marks. The Court was then adjourned.

THE OBEDIENT KID.

In a stable lived a Goat that had a pretty little kid, of which she was very fond. This kid was too young to go about with her mother; and the mother was half afraid to leave her by herself. But the goat was obliged to go out to get food.

One day she said to her little kid, "My dear, I am going to fetch a cabbage and a lettuce for your dinner. Mind you do not go out while I am away.

Lock the door of our stable, and do not open it to any one who knocks, without first looking out of the window to see who it is that wants to come in. Pray mind what I say to you, and do as I bid you."

"Yes, dear mother," said the kid, "do not be afraid, I will do as you bid me. I will look out of the window before I open the door."

"Good-bye, my darling," said the old goat, "remember what I have said."

"Good-bye, dear mother," said the kid, "I will do as you bid me."

So off the old goat went; but she waited outside the door while the little kid shut it, and she looked back very often, to see that it was kept shut.

A wolf who lived near saw the goat pass by. He had often wished to eat up that nice tender young kid, and this day having had no breakfast, he was very hungry. "Ah! ah!" said he, "now the old mother is out, I will go and eat that silly young kid. She will be sure to leave the door open." Away he ran to the stable where the goat lived. He went to the door with a bounce, thinking to push it open. He did not expect to find the door fastened; but he was mistaken, and he could not get in.

"Although you have fastened the door, Miss Kid," growled he to himself, "I will eat you—I will knock, and you will be sure to come and open the door. And then—"

He was so pleased with the thoughts of eating the little kid, that he licked his lips; and lifting up his paw, gave a loud knock at the door.

"Who is there outside?" asked the little kid from within.

"I, my dear," said the wolf, trying to speak like the goat; "I, your mother, open the door quickly, I am in a hurry."

"Oh, no! you cannot be my mother," said the kid.

"Open the door this minute, or I shall be very angry with you," said the wolf.

"If you are my mother," said the little kid, "you will wait while I look out of the window, for my mother told me to do so before I opened the door."

"Open the door directly," called out the wolf. But the wise little kid went up to the window and looked out.

"Oh! you bad wolf," said she, "to try to cheat me; but you will not eat me to-day; so you may go away, ha! ha! ha!" and the kid laughed. "I take care to mind what my dear mother says to me, ha! ha! ha! master wolf, you may go away, ha! ha! ha! ha!"

The wolf gnashed his teeth and growled. He looked very fierce at the little kid, but he could not reach her. The kid went from the window, but the wolf still heard her ha! ha! ha! as she laughed at him safe inside the stable.

The wolf went away, and soon afterwards the goat came back. She knocked at the door. The little kid asked, "Who is there?"

"It is I, your mother, darling," said the goat.

"You speak like my mother, but I will be sure," said the kid, "before I open the door. If you are my mother really, you will not mind waiting while I look out of the window."

So again the kid looked out of the window, and when she saw it was her own mother, she ran quickly and opened the door.

"Dear mother," said she, "such a large cruel wolf has been here; but I did as you bade me: I looked out of the window before I opened the door."

"Dear kid," said the goat, and she licked her with her tongue; "good kid, wise little kid. If you had not obeyed me, that cruel, greedy wolf would have eaten you up, and you would never have seen your mother again. Good child, to do as I bade you."

And then the goat gave the kid the fine lettuce and cabbage she had brought home with her.

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Charm the sweet hours of May;
But, soon as Autumn winds prevail,
These warblers fly away.

They but as *summer friends* appear
While skies are bright and warm;
But Robin stays through all the year,
And bears the pelting storm.

And when rough gales destroy his nest,
By happy instinct led,
He comes a fearless little guest,
To seek for crumbs of bread.

Then, even when chill snows descend,
And winds beat rough and strong,
We'll hail the little *winter friend,*
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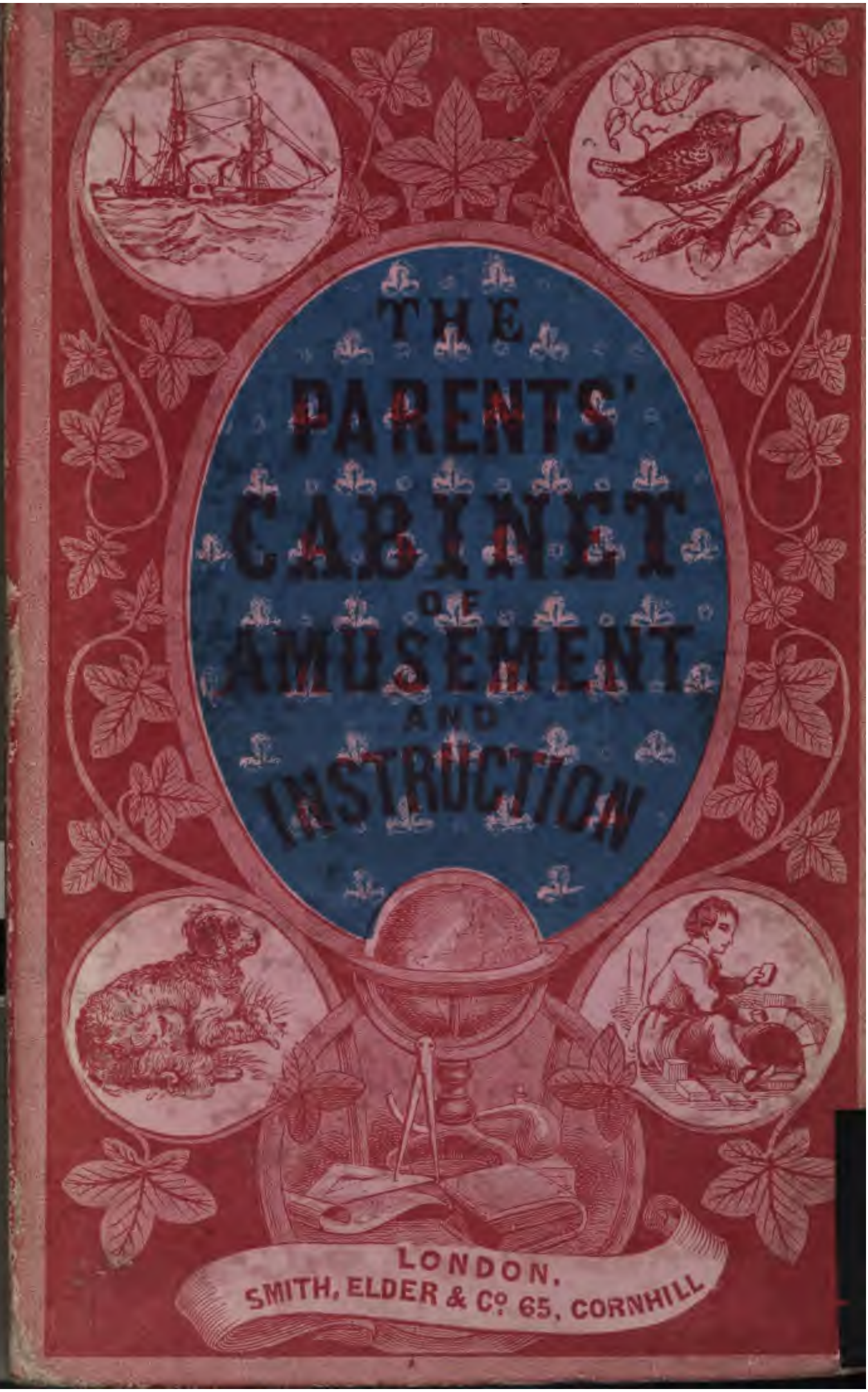

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